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Only 48p!

CRASH! Adult game rocks city – page 3

NEW COMPUTER EXPRESS

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SINCLAIR PC 200 FIASCO



On sale without manuals, operating system, monitors and games ● Full story page 2 ● Analysis page 11

So what is UNIX?

All you ever needed to know (but were too afraid to ask) – page 23



PUBLISH ON YOUR MICRO!

A friendly guide to desktop publishing – page 17

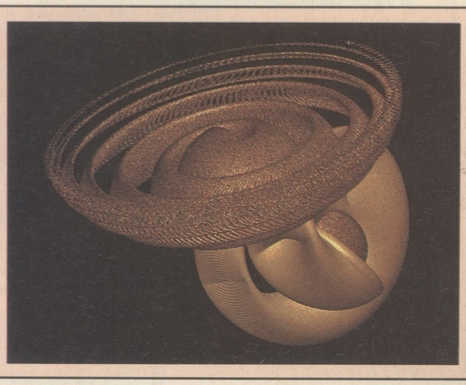
R-TYPE



Power-packed ST version blasts in – page 33

Pixel Picasso!

The country's most talented computer artist reveals his secrets – page 46



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NABBED!

Micronet tracks down comms cheat

Bulletin board Micronet is tightening up its security after a fraudster appeared on subscribers' screens last week offering free air time.

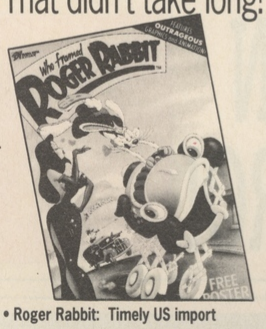
The cheat was luring Netters into dialling his number so that he could find out their secret passwords. His plan was then to use those passwords and gain Micronet time for free.

Micronet is stressing that members were quick to report the fraudster and claims that no-one has been cheated. However, the bulletin board screens have been flashing security warnings all week.

"We're very security conscious and we're looking into this matter closely," commented Micronet's Helen Sullivan. She said the identity of the bogus user was known and he has been suspended from the network. Micronet's top brass are currently pondering what further action to take.

Although this ploy is simple it has never been used before. Sullivan explained that users "are very careful with their IDs and passwords.".

That didn't take long!



• Roger Rabbit: Timely US import

Big name licence gluttons will be pleased to hear that a computer version of *Who Framed Roger Rabbit?* has already arrived in the UK.

The movie itself goes on general release here this month after taking the US by storm. And the game, sourced from US software house Buena Vista, has been imported by GameStar which specialises in grabbing brand new games from across the Atlantic.

Who Framed Roger Rabbit? is available for the Amiga at £24.95. More info on 0252 877431

Angry buyers find some machines lack manuals and software

AMSTRAD BLAMED FOR PC200 CHAOS

High-street chain Comet has accused Amstrad of a 'cock-up' after supplies of the new Sinclair PC200 turned up in Comet stores without manuals and essential software.

An *Express* investigation has revealed a wide range of problems in various shops leading to anger and frustration among prospective buyers of the new machine.

Although Comet has conducted nationwide advertising of the PC200, many shops last week were unable to supply the full package:

- Many had machines without manuals and without the MS-DOS operating system.
- Others were missing the joystick and free US Gold games bundled with the machine.
- In some shops monitors were unavailable.
- Others had monitors but no computers.
- Buyers also complained that even the leads to connect to a TV set were missing.

The problems have led to some branches taking the PC200 off display, while in other cases, buyers have been allowed to part with cash and have only discovered when they opened the box at home that the machine was virtually unusable.

One such buyer told *Express*: "I have paid in advance and have nothing to show but a useless, inert PC200."

A Comet spokesperson told *Express* that a batch of the machines delivered by Amstrad had items missing. "It's a cock-up at their end."

She said the missing stock had been reordered and was on its way to the shops.

"The machines are selling brilliantly. We can only apologise to customers, but the problem is being sorted out."



• Comet: Some shops with, some without

Amstrad – which owns the Sinclair brand – says that only the first batch of "a tiny number" of machines was affected. Asked why so many shops nationwide seemed to have had problems, a spokesman said: "Comet have been sent all the pieces. I can't comment on their distribution."

Opinion page 5
News analysis page 11

ST console: the only way is up (and sideways)

Atari's £99 console based on the ST will include hardware-controlled scrolling, both vertical and horizontal, Atari boss Bob Gleadow has told Express.

This facility is part of an extended graphics capability. However the machine will not use sprites.

The console is due for release in the UK next autumn where it will come head to head against stiff competition from, among others, the Sega Megadrive.

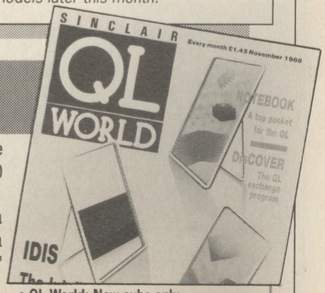
At the moment three ST consoles are in the hands of software developers in the US. UK publishers should be receiving models later this month.

QL World drops off the shelves

The only remaining QL monthly *QL World* is to be taken off the news shelves next March and will be available only through subscription.

The mag's publisher Focus says that since *QL World* is being bought by the same people each month it might as well go out through the post. Focus claims the title is selling to a "hard core" of 17,000 users.

"We're talking about a mag dealing with a machine which hasn't been in circulation for years and this is a natural progression," commented publisher Perry Trevers.



• QL World: Now subs only

Why you'll pay extra for your printer

Faint hopes that the EEC might bring about a reduction in dot matrix printer prices were dashed last week as import levies on 15 Japanese manufactures were upheld for the next five years.

Effectively, this means that the Japanese printers cost up to 47 per cent more than they otherwise would. The decision was made after European manufacturers claimed the Japanese were dumping printers onto the European market and selling them at ultra low prices (see box out).

With this move the EEC hopes to protect European companies such as Phillips and Olivetti and to nudge Japanese companies into making printers here instead of simply exporting.

The Japanese claim that European printer manufacturers are simply exploiting EEC rules to avoid being undercut.

Epson has been the most vociferous opponent of the levies, running advertisements in the national press decrying the move. A spokesman told *Express:* "The only people who lose, as always, are the end users. As someone pointed out last week the European manufacturers are still driving around in their Mercedes."

Epson's levy is fixed at 26 per cent for the next five years. The firm's penalty is less than other Japanese firms because it has manufacturing plants in Romford and Paris.

"It's a matter of great concern to us. I wish we could sell those printers with 27 per cent off the price. But because the European manufacturers need to maintain high prices in order to meet their costs we are forced to have artificially high prices."

He added: "If the Europeans' costs go up they'll just go scuttling off to the EEC with cap in hand asking for the levy to be increased.

The dumping claim

The European claim is that the prices charged by the Japanese manufacturers over here are artificially low. For example a company already producing 10,000 printers a month for the Japanese market could ramp up production by another 1,000 very cheaply and then "dump" these extra machines into Europe at low prices in order to increase its share of the market.

The Japanese, however, say their lower prices are due simply to more efficient manufacturing.

CRASH! Larry zaps City gamers

A new craze amongst big City firms for computer games had huge banks and trading houses in a panic last week as a software virus crashed many vital systems.

City whizz-kids have been whiling away the hours by playing Mediagenic's salacious game *Leisure Suit Larry in the Land of the Lounge Lizards.* However, it appears they were playing pirated versions which contained a virus – a piece of software designed to remain invisible for a period so that it is copied undetected from user to user. When the virus became active it wiped key financial information off the dealers' hard disk drives and led to whole networks being shut down.

Since the Black Monday Crash dealers have found themselves with fewer opportunities to make pots of cash and more time on their hands. Thus the new trend for computer games. But the effect of this leisurely pastime has been severe chaos in several city firms.

Some merchant bankers are refusing to turn their computers on for fear of their machines become infected.



• Larry's girl: City pays for computer titillation

Mediagenic has managed to distance itself from the nightmare, pointing out that such are the risks of using non-original versions of a game.

"Basically a bootleg has caused this. There's no problem with the original," commented the firm's Amanda Barry.

"Obviously we're concerned for them, but if you must use pirated games you should be aware of the consequences."

Leisure Suit Larry appeals to the City high flyers because it involves a seedy womaniser and gambler. The modern adult adventure charts his "humorous" exploits in casinos and nightclubs.

Computers face real world test

Four huge American computer companies have put their heads together to try to come up with the definitive standard for testing machines.

The aim is to iron out all the anomalies which have baffled computer users for years.

Whilst in the past benchmarks have been measured by hugely different technical standards now they will be tested according to real applications such as programming, database management, computer aided design and electronic publishing, The four companies involved are Hewlett-Packard, Apollo, MIPS and Sun.

Not a lot of people know that

Father Patrick Ryan, the Catholic priest Mrs Thatcher's so keen to get her hands on, is reported to be heavily into computers.

Ryan is said to have been responsible for computerising the IRA's multifarious financial activities.

The IRA's records system is reported to have been very primitive before it was transferred to micros.

Amiga and ST: the numbers game

Figures released by Commodore suggest that there will be twice as many Atari STs installed as Amigas by the year's end.

Atari reckons that by midnight on New Year's eve there will be around 200,000 of the machines in use in the UK. With this Commodore has no quibble – it estimates that there will be "between a hundred and 130,000" Amigas in use by then.

Other market sources suggest these figures are optimistic. One observer said there may only be 40,000 Amigas sold by the end of his year – 15,000 in 1987 and 25,000 in 1988. Commodore disagrees.

"That sounds way off, terribly low," said a spokesman. "Amiga games are selling nearly as well as ST games for a start, so there can't be that much difference."



• Amiga: Half as many as the ST?

GAMES TOP TWENTY — FULL PRICE

1	NE	Double Dragon *Spectrum, C64*	MELBOURNE HOUSE
2	1	Last Ninja 2 *Spectrum, C64, CPC*	SYSTEM 3
3	8	Return Of The Jedi *Spectrum, C64, ST, CPC*	DOMARK
4	2	Football Manager 2 *Spectrum, C64, ST, Amiga, PC, CPC*	ADDICTIVE
5	17	Pacmania *ST, Amiga, Spec, C64, CPC*	GRAND SLAM
6	4	Out Run *Spectrum, C64, ST, CPC, Amiga*	SEGA/US GOLD
7	3	Daley Thompson's Olymp. Chall. *Spectrum, C64, ST, Amiga, CPC*	OCEAN
8	5	Taito Coin-ops *Spectrum, C64, CPC*	OCEAN
9	NE	Game Set and Match 2 *Spectrum, C64, CPC*	OCEAN
10	7	Supreme Challenge *Spectrum, C64, CPC*	BEAU JOLLY
11	NE	R-Type *Spectrum*	ELECTRIC DREAMS
12	RE	AfterBurner *ST*	ACTIVISION
13	20	Elite *Spectrum, C64, ST, BBC, Electron, PC, MSX, CPC*	FIREBIRD
14	NE	Emlyn Hughes' Int. Soccer *C64*	AUDIOGENIC
15	12	Track Suit Manager *Spectrum, C64, CPC*	GOLIATH
16	RE	Airborne Ranger *Spectrum, C64*	MICROPROSE
17	NE	Lombard RAC Rally *ST, Amiga, PC*	MANDARIN
18	RE	Starglider 2 *ST, Amiga*	RAINBIRD
19	13	Gold Silver And Bronze *Spectrum, C64, CPC*	US GOLD
20	RE	Armalyte *C64*	THALAMUS

GAMES TOP TEN — BUDGET

1	1	Joe Blade 2 *Spectrum, C64, BBC, C16, Electron, CPC*	PLAYERS
2	2	Bomb Jack *Spectrum, C64, C16, CPC, ST, Amiga*	ENCORE
3	9	Commando *Spectrum, C64, BBC, C16, Electron, CPC*	ENCORE
4	3	Footballer Of The Year *Spectrum, C64, BBC, Atari 8-bit, C16. MSX, CPC*	KIXX
5	6	Advanced Pinball Simulator *Spectrum, CPC*	CODE MASTERS
6	RE	Combat Lynx *Spectrum, C64, CPC, BBC, Electron*	ENCORE
7	10	International Rugby Simulator *Spectrum, C64*	CODE MASTERS
8	RE	Stunt Bike Simulator *Spectrum, C64, CPC*	FIREBIRD
9	RE	Kik Start 2 *Spectrum, C64, CPC*	MASTERTRONIC
10	4	End Zone *Spectrum, C64, CPC*	ALTERNATIVE

COMPILED BY GALLUP

NE – new entry
RE – re-entry

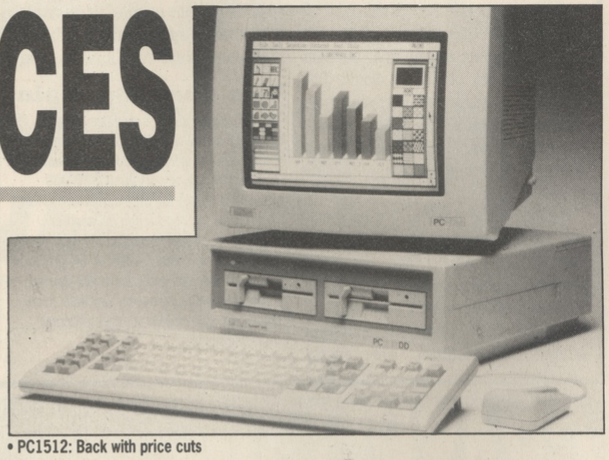
Micro store boom

The days of computer shops closing down hither and thither appear to be behind us with new outlets springing up every week.

Budding chain store Computer Express (no connection with this magazine, except as an advertiser) this week opens a new shop in Birmingham and is still standing behind its bullish claim to be Britain's most promising computer outlet.

Earlier this year the company predicted that it would beat Dixons Business Stores as the number one outlet for serious computer users claiming better technical know how. Whilst the new shop in Birmingham is only its fourth venture Computer Express expects to open another ten before the end of next year.

AMSTRAD SLASHES PC PRICES



• PC1512: Back with price cuts

Amstrad has slashed between £50 and £250 off its range of PC1512s and 1640s in a bid to clarify its already crammed MS-DOS line up.

The new prices come into effect from January 1st on all but the entry level machines. Amstrad reasons that the current pricing levels of the higher end machines overlap onto territory now taken by the recently launched 2086.

Continuing chip shortages and the meagre availability of the new 2086s are responsible for Amstrad waiting this long to make the cuts. Come the new year, supplies of the 1640s and 1512s will be substantial for the first time in months.

Sightings of the 1512 have been rare these last few months. Some industry pundits were even suggesting that Amstrad was thinking of cutting the machine off – a move which would have flown in the face of traditional Sugarite thinking.

"At the time of the launch of the PC2000 range we decided a need for price differences between the 1512, 1640 and 2086," commented Amstrad's marketing director Malcolm Miller. "However, due to the well publicised D-Ram shortage we felt it would be futile to alter prices at that stage. Now that we have been able to secure a more free availability of the chips, the time is right," he said.

THE CUTS IN DETAIL

1512 DD Mono	Down £50 to £499
1512 SD colour	Down £50 to £499
1512 DD colour	Down £100 to £599
1640 DD mono	Down £50 to £599
1640 HD mono	Down £150 to £799
1640 SD colour	Down £50 to £599
1640 DD colour	Down £100 to £699
1640 HD colour	Down £200 to £899

These cuts are likely to prompt similar moves from rivals such as Commodore and Atari. Commodore greeted the news with some dismay observing that its pricing policy has been geared to competing with Amstrad's. And Atari is likely to rejig its prices. One well placed source said he would be "very surprised if Atari didn't have the same prices at the same time".

Hacking in the House

Government was last week mulling over the growing dangers to the security forces from hackers following the outbreak of a virus in US military systems in November.

According to the armed forces minister Archie Hamilton, the country's defence computers have been tightened up. However, he was not prepared to confirm any details. Labour promptly accused the minister of complacency – which Hamilton, just as promptly, denied.

Backbenchers, meantime, have once more called for hacking to be made a criminal offence.

Move over Big Al

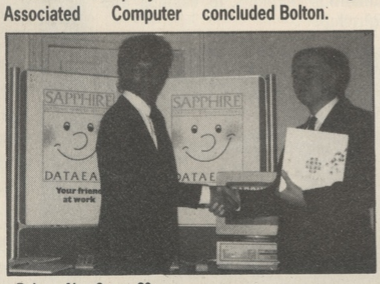
With the claim to being the next Alan Sugar a fifteen year old schoolboy is planning to launch himself into the rough and tough world of business software.

David Bolton has already made in excess of £8,000 from his tailor made PC business programs with such customers as toy chain Carousel. But the "fairly academic" Croydon based entrepreneur is now set to write a program for general use.

"I've usually written for specific uses," he told *Express*. "People use me because I can do it very quickly. Carousel were waiting months for a programer to finish their software but they asked me to do it and I finished in a couple of weeks."

He was programming on a ZX81 at the age of ten – but found it all too simplistic and has been working on MS-DOS for the last few years

Bolton's company – Associated Computer Enhancements – was started off with some help from Amstrad and PC distributor Eltec which sponsored him with Amstrad hardware. Now ACE is writing a program which can link roving salesmen to their head office. "I hope to be the next Alan Sugar," concluded Bolton.



• Bolton: Alan Sugar 2?

Coders claim top spot

Code Masters was crowing itself red in the face last week after the news that it has regained its long lost position as Britain's top selling games software house, according to Gallup.

The release of its full price debut *Four Soccer Sims* and a bucketful of new budget titles has bumped the young company into the much fought over pole position.

Some had viewed the Coders' slip earlier in the year as a classic example of sitting on laurels. Such old stalwarts as *Jet Bike Simulator* were becoming less popular and the Darling brothers – who run the firm – were left with little in the way of new games.

"We're where we should be and that's number one in the open market," boasted Code Masters' operations manager Bruce Everiss. "And that's not just because we sell a lot of budget games. *Four Soccer Sims* is selling in droves."

Did you know?

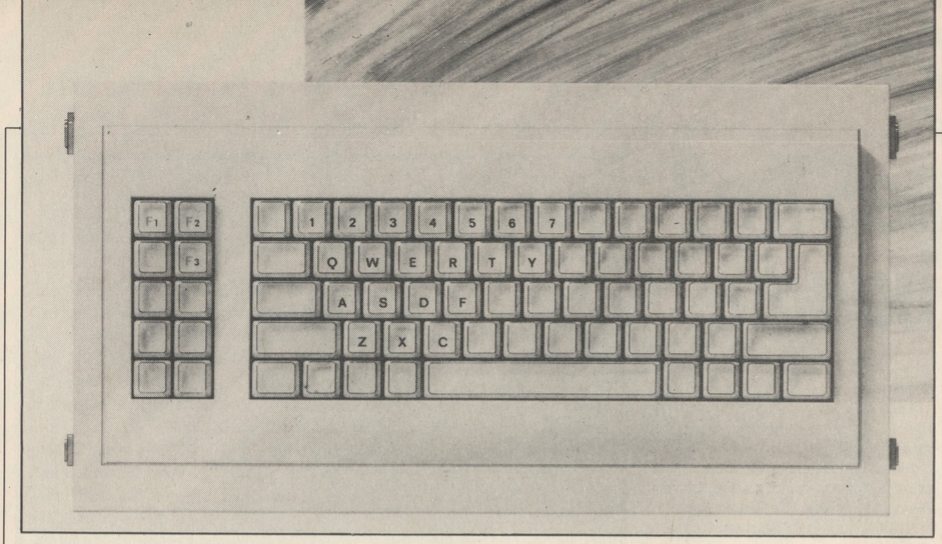
Some people worry about radiation from monitors, but this is ridiculous. The Sydney Morning Herald shuts down all its computers for ten minutes each hour "for health reasons...."

Sampling samplers

ST musicos are being promised an upgrade to Microdeal's Replay 4 Sampler in the next few months.

Luton based AVR is developing Replay Deluxe which includes a 10-bit analog-to-digital converter, a12-bit digital-to-analog converter and a sample length of 20 seconds on a 520ST and 40 seconds on a 1040. It will cost £150.

More info on 0726 68020.



• Spectrum-compatible Coupe: First pictures

FOUR-MODE COUPE UNVEILED BY MGT

Pictured here is the first illustration of Miles Gordon Technology's new computer, which has been exclusively released to *Express*.

The machine, called the Coupe, costs £149.95 and should be available from April. A version with 3.5 inch drive costs £220. It will run most Spectrum software as well as being switchable to three other modes, which do not include MS-DOS. Crucially, the range has Midi ports.

The Coupe is the entry level micro in MGT's SAM family of computers. Higher priced models should be arriving later next year. Whilst being Spectrum compatible, MGT is keen to stress that this is its lowest mode and simply a foothold for the new machine.

MGT is negotiating with software publishers for programs compatible with its other modes - the details of which are still under wraps. However, a DTP package, educational program and graphics pack should be ready for the new formats by launch time.

The disk drive is placed underneath the keyboard at the front of the machine. However, despite being a 3.5 inch drive it is not standard. The drive was manufactured by Citizen using its watch technology, and is "extremely thin". It runs standard 3.5 inch disks, however.

Apart from that, the machine will run cassettes and will be able to accomodate normal disk drives. It features 512 x 192 pixels on screen and sports a palette of 64 colours.

"I don't want people calling this a Spectrum clone because there's so much more it can do. There would be no point launching a machine with technology which is five years old," said joint boss Alan Miles. "I refuse to compare it with other machines because it's a new generation for computing."

It's hardly surprising that Miles is playing down the Spectrum compatibility element. Amstrad has already stated that it will be keeping a close check on its intellectual rights. Miles says that none of those has been infringed.

Some 56,000 of the machines are due to be built in the first year. Sales are expected to split 50/50 between drive and driveless. MGT has been working on the machine for some two years now. The firm's main business is as a mail order firm/ peripherals manufacturer.

Miserable climate hits Atari Show

Bad weather has been blamed for the low turn out at the recent Atari Show. The event attracted 13,000 visitors - 4,500 fewer than last Easter's show.

However, compared to last November's show the figures are up by 3,000. "I think you have to compare like with like," stressed show organiser Mike Cowley of Database. "We had rather poor weather and people don't like to queue up in the cold".

The notion aired by some visitors and exhibitors that the show was dull was rebuffed by Cowley. "I wouldn't say that. It's a great opportunity to pick up good bargains." Database has yet to release attendance figures for the Commodore Show of four weeks ago. Customarily, if figures are good they are released swiftly.



• Atari Show: Bad weather, bad news

Horse-racing duel nears winning post

Cascade's sporting challenge with bookmaker William Hill is nearing the finishing post with the software house marginally ahead.

William Hill had challenged Cascade to try out its horseracing tipster program with £50 in free bets. The duel was organised through New Computer Express *with proceeds going to Children In Need. Thus far Cascade's* Form Master *has put the Harrogate firm £25 ahead. However, that represents two races won and two lost.*

Cascade was given something of a free rein by William Hill. The software house has been allowed to choose races which it feels will work best with the program.

"There are a lot of small races during the week and low quality ones which aren't really any good," said Cascade's boss Nigel Stevens. Cascade has another race to go but even if it loses that one the firm is still £15 up.

For William Hill, Grahame Sharpe said: "It depends on the last race whether they have really won. If they lose then that's three out of five gone. We're still happy to accommodate punters who use these systems – but let's hope they're not too successful."

He added: "Systems have the drawback of having to wait for the right races – most punters like a wager every day, or at least every week."



• Stevens: Tipping the balance

NEW COMPUTER EXPRESS

OUR OPINION

PC200 disaster

If nothing else, the shambles over the PC200 smacks of nothing so much as the old days of Sinclair Research. Attention to detail never was its forte - not when there was a mad rush to get a product out.

In part, it's a similar rush that has caused the Amstrad/Comet difficulties. Amstrad has always been peculiarly sensitive to criticisms about hitting its street dates.

And it has to be said that the chip shortage hasn't helped Amstrad, though that is not in any way an excuse for incomplete packages turning up on retailers' shelves. D-Ram crises in any case, have nothing whatsoever to do with operating software, joysticks, games and manuals going adrift.

But now is not the time for trawling through the reasons. What is needed is action - and fast. It is simply not good enough for Amstrad and Comet to bicker over who is to blame. If you've paid out several hundred pounds only to discover that your computer is unusable, what you need most is someone to take responsibility, get their finger out and solve the problem.

The customer, presumably, is still king...

Tough for SAM

After many months of nods and tips and winks and leaks, Miles Gordon Technology (MGT) has finally unveiled its SAM range of computers. *Express* naturally wishes it all the best. But the SAM faces a tough fight - certainly a tougher one than when it was first mooted.

For the world has moved on from Spectrum technology, as MGT knows. And yet SAM is more than just a better-than-Spectrum Spectrum. For one thing, it simply looks so much more plausible. More substantially, it's that much more powerful, with better specs and more options. It may not quite represent a new generation for computing, but it's more than just a contender.

What will hold it back more than any industry structural difficulties is the firm's lack of marketing clout.

These days, it's the sizzle not the sausage that matters.

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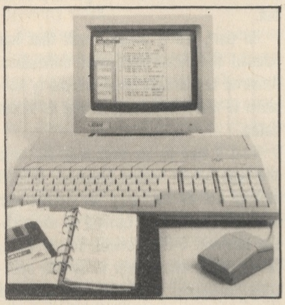
Music maeSTro? Here's a bundle

Atari is planning to bundle music studio program *Steinberg Pro 12* with the 1040 ST.

The configuration will appear in the New Year at the usual entry level price of £499. The *Steinberg 12* costs £150 and is a cut down version of the 24 – reputed to be the professionals 'favourite.

Atari has always maintained that the 1040 is the best machine for musicians. The bundle will be sold through the music trade as a 12 track studio. A synthesiser and amplifier is needed to utilise the 'Music Pack'.

"The ST has Midi hardware so, with the software, you don't really need all the gadgetry of a mixing studio. You simply play everything through the machine and the software does the work," said Atari's Darryl Still.



• 1040: Music medium

Manual dexterity

An alternative to Atari's own ST manual is being published by the ST Club.

"If the first one tells you how to turn the machine on, this one tells you how to use it," reckons the Club. Your Second Manual for the ST costs £3.95. More details on 0602 410241.

Petrol bomb hits computer shop

A petrol bomb has gutted Chester based computer shop and mail order company Cestrian causing more than £25,000 damage. The firm suggests a competitor might be to blame.

The attacker struck in the early hours of Wednesday November 30th by ripping down the shutters, hurling a brick through the window and then throwing in the petrol bomb. The shop has been closed down for a week but the mail order operation should be back to normal in a matter of days.

All the software in the shop was damaged by smoke, and staff there are said to be working around the clock to clear up the debris.

"We can't understand why anyone would do this unless it's a competitor who we've hit hard," said boss Ron Donovan. "Even so, that would be taking things a bit far." The Chester Police are currently investigating the case.

Donovan added: "There are going to be a few hiccups on the mail order side and if anyone has any problems I'd appreciate if they'd call me."

The number to ring is 0244 312666.

Samsung sings praises of new range

Enormous Korean PC manufacturer Samsung is to upgrade its range of XT machines with a price increase to boot.

And the firm's paper white full page monitor has finally been launched. Samsung claims that the £900 monitor is half the price of its competitors efforts.

The SPC3000 PC will now sport a 102 key keyboard rather than the standard 84 model. And the machine has been upgraded from a speed of six and ten MHz to eight and ten MHz.

Now called the SPC3000V the entry level twin drive has been increased from £699 to £749 with the 20 Meg hard disk rising from £999 to £1,049.

Meanwhile, it also looks as though Samsung's earlier touted PS/2 machine won't be appearing at the *Which Computer?* Show early next year after all. Sources suggest the firm is stepping back and re-evaluating the whole PC upgrading scene. Samsung though is preferring to keep plans under its hat.



• PC3000: Priced up and upgraded

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We are now running a Viewdata bulletin board on 0772 454328 *6pm to 9am weekdays and all weekends* which is mainly QL specific but includes a Z88 section and is soon to include an Amiga section.
We are at the moment writing *Amiga to Z88 file transfer software* and *Amiga to QL software.* If you are interested in either of these then please contact us for more details.
We stock too many products to mention in any advert, *(we have a regular four page advert in QL World each month)*, so please send us a SAE or give us a ring for our free product guide and price list.
The next ZX Microfair is to held on December 10th at the usual Hoticultural Halls, London, see us there as usual on stalls 91, 92 and 93.
A goods ordering section is now available on the Bulletin Board, so goods can be ordered by Modem.

NORTHERN SINCLAIR SHOW

Due to a lack of previous shows in the North for Sinclair machines Sector Software are to be organising a Northern Sinclair show around Preston in Lancashire (jnct 28 or 29 M6) in about March, anyone who would like to be mailed with details or any Spectrum, QL, Z88 companies or peripheral suppliers please contact us for details.

We have a range of QL, Spectrum, ZX81, and Amstrad spare parts including service manuals, ring for prices on individual items.

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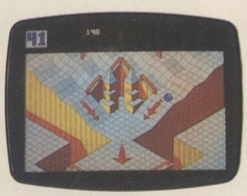
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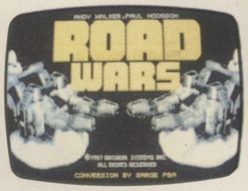
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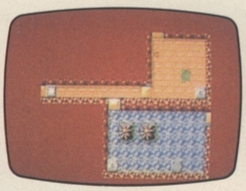
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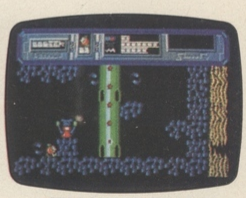
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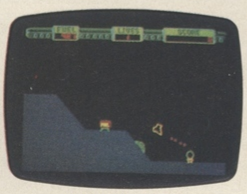
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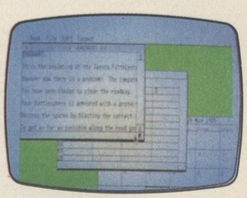
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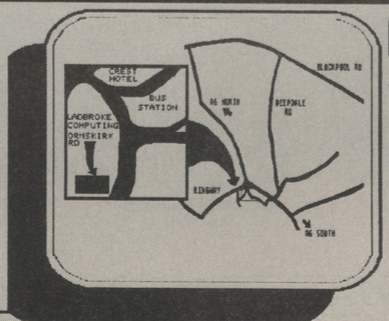
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FRUSTRATION!

How Amstrad's Sinclair PC200 launch led to chaos at Comet



• PC 200. Great interest, greater problems...

Buy a new computer and what would you expect when you opened the box? You'd hope to find the machine there, yes, and also the manuals, and the disks you need to get the thing up and running. And if the machine was being advertised with a valuable bundled gift, you'd expect that to be present too.

Some buyers of Amstrad's new Sinclair PC200 had a more frustrating story to tell last week. Somehow, through an extraordinary foul-up, the computers were turning up seriously adrift of their vital parts: manuals, operating software, and bundled games.

No, the problem did not hit every branch. And yes, Comet's salesmen are making it clear to most prospective purchasers that there are problems. Nevertheless there's been a serious mixup which has left customers gnashing their teeth.

The autumn build up

The sequence of events went like this: the PC200 was announced by Amstrad the day before the Earls Court Personal Computer show in September. By using the Sinclair name – which is owned by Amstrad – on a low-cost IBM compatible, the company hoped the machine would score for use both as a games machine and serious computer.

Amstrad caused some surprise by stating that until Christmas Comet would be the only high-street multiple store to stock the machine.

Around 250 were then flown into the country for use as display models in Comet branches and Comet ran national advertising highlighting the PC200. The machine was said to have created "considerable interest" and customers were invited to place deposits to secure themselves a model for when full supplies started.

Amstrad blamed

Then the problems began. Many Comet stores did not receive their supply of machines on the scheduled delivery date. And when packages eventually turned up over the last few weeks, many had items missing.

Last week *Express* contacted Comet branches at random in Glasgow, Birmingham, Manchester, Norwich, Newcastle, Sheffield, Belfast, Chelmsford, Oxford, Gloucester, Bristol, Stevenage and Swansea. Only the last three had the full bundle.

Despite the problems some buyers were allowed to hand over their money for a machine that – as it stood – was basically unusable. And sales staff had the frustrating task of having to arrange subsequent separate delivery of the missing manuals and software.

Comet says Amstrad is to blame. A spokesperson told *Express*: "Amstrad didn't deliver everything in the boxes and so it's a cock up at their end" – a comment indicating considerable annoyance since hardware manufacturers and high street chains will usually claim to be the best of pals through hell or high water.

Many of the sales staff we spoke to echoed that frustration. One said: "We're annoyed because it means we can't sell the computers. You can hardly have them on display when the manuals and software are missing. It's the first time I've seen anything like this happen – I don't know what Amstrad are playing at."

Ludicrous suggestion

Amstrad themselves have been keen to play the matter down. Marketing manager Anthony Sethill told *Express* that only a tiny number of early machines had been affected. and that Comet had since been supplied all missing items.

Asked how it was that many shops were still complaining of shortages, the he said: "I can't comment on Comet's distribution."

But he said it was absurd to suggest there was any dispute between the two companies over the affair.

"We're doing millions of pounds worth of business with them. There's no way a thing like this would cause any problems."

Sethill wouldn't be drawn on whether Amstrad had knowingly delivered machines with items missing.

But he described as "ludicrous" the suggestion that Amstrad might have rushed out the PC200 in a slipshod fashion to meet Comet's delivery guarantees and to exploit the lucrative pre-Christmas market.

"We're going to be introducing £3000 computers shortly. We're not about to do anything in a slipshod manner."

Industry observers point out that numerous computer launches into the consumer market have had teething problems. Earlier Sinclair machines (before Amstrad bought the name) were notorious for being delivered to the High Street months late and early models of both the Atari ST and Commodore Amiga suffered from various glitches.

Amstrad however has a reputation for launching products properly. So it's more than surprising that some packages were shipped in unusable state.

By week's end however, there were signs that the situation was being brought under control. Comet confirmed that the missing items had been received and sent to their distribution centres. These will be passed on to the shops "as soon as possible." Comet has promised to apologise to those customers experiencing difficulties via a letter and to sort out any abiding nuisances. ●

The PCW story

Amstrad's problems over the PC200 follow hard on the heels of another supply problem this time relating to the Amstrad PCW 8512.

A batch of the machine was shipped in from Germany. Unfortunately the imported models have a different expansion port making them impossible to connect to devices such as modems and light pens without the purchase of a separate adaptor.

TWO TALES OF WOE

Here are the experiences of two Express readers who tried to buy a PC200. You can read their letters in full on page 13

Mr E Ingram of Paisley in Scotland went to his local branch of Comet and was told by the salesman that although the monitor would be another 10-14 days before delivery, he could get by in the meantime using his own TV.

But when he got the machine home he discovered no manuals, no operating system and not even the lead needed to plug into a TV.

Despite a return to the shop and a fruitless protest phone-call to Amstrad, he was still , last week, waiting for his machine.

At the other end of the country **Mr D Mitchell** of Eastbourne in Sussex has a similar tale.

He was informed when he paid for the machine that the manuals were missing, but it wasn't until he got home he discovered that there was also no operating system and therefore no way of using the machine.

After trying other local branches of Comet, he called the original shop again and was told he'd have to wait seven days.

Last week he was still waiting.

Want to buy one this week?

By the time you read this, it is likely that many branches of Comet will be able to supply you the package in full. But do check carefully that all the constituent parts are there before parting with your money.

This is what you should get for £299:

- The PC200 computer itself
- A mouse
- A lead to connect up to your TV.
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Streetfighter	U.S. Gold	24.99	19.50
Strikeforce Harrier	Mirrorsoft	24.99	16.50
Strip Poker II	Anco	14.99	10.25
Strip Poker II Data Disc 1	Anco	9.99	7.00
Sub Battle Simulator	Epyx	24.99	19.50
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Swooper	Robtek	19.99	13.50
Tanglewood	Microdeal	19.99	13.50
Temple of Apshai	U.S. Gold	24.99	19.50
Terrapods	Psygnosis	24.99	16.50
Tetraquest	Microdeal	19.99	13.50
Thexter	Sierra	24.99	16.50
Three Stooges	Mirrorsoft	29.99	19.50
Thundercats	Elite	24.99	16.50
Time and Magic	Level 9	19.99	13.50
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Tracers	Microillusions	24.99	16.50
Ultima III	Origin	24.99	16.50
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Uninvited	Mindscape	29.99	19.50
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Virus	Firebird	19.99	13.50
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Whirligig	Firebird	19.99	13.50
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Witness	Infocom	29.99	19.50
World Darts	Mastertronics	14.95	10.25
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Xenon	Melbourne House	19.99	13.50
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Zynaps	Hewson	19.99	13.50

IF YOU DON'T SEE IT ON THE LIST THEN PLEASE ASK
WE CAN'T LIST EVERYTHING AVAILABLE.

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Netherworld	Hewson	19.99	13.50
Robcary	Anco	19.99	13.50
Alternate Reality	Grand Slam	19.99	13.50
Garfield	The Edge	24.99	16.50
Wizard Wars	Canvas	24.99	16.50
Chronoquest	Psygnosis	29.99	19.50
Battle Chess	Electroic Arts	24.99	17.50
T. Pursuit (New Beginning)	Domark	19.99	13.50
Basketball	Epyx	24.99	19.50
Nebulas	Hewson	19.99	13.50
Rocket Ranger	Mirrorsoft	29.99	19.50
Ingrids Back	Level 9	19.99	13.50
Impossible Mission II	Epyx	19.99	16.00
Quantox	Anco	14.99	10.25
Spidertronic	Erc	19.99	13.50
Football Director II	D & H	19.99	13.50
Eddie Edwards Super Ski	Loriciels	19.99	13.50
Mega Pack (6 in 1)	Tynesoft	24.99	16.50
Fernandez Must Die	Imageworks	24.99	16.50
Spaceracer	Loricels	19.99	13.50
Tracker	Rainbird	24.99	16.50
International Soccer	Microdeal	19.99	13.50
Driller	Incentive	24.99	16.50
Nigel Mansell's Grand Prix	Martech	24.99	17.50
Pacmania	Grandslam	19.99	13.50
Outrun	U.S. Gold	19.99	14.50
Sorcerer Plus	Virgin	19.99	13.50
Cybernoid	Hewson	19.99	13.50
Reach for the Stars	Martech	24.95	17.50
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Zero Gravity	E.A.S.	19.99	13.50
Mara Whittakers Xmas Box	Anco	14.99	10.25
Speedball	Imageworks	24.99	16.50
Defcon 5	Cosmi	24.99	16.50
Crystal Hammer	Micropartner	14.99	10.25
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Pioneer Plague	Manderine	24.99	16.50
Growth	Eclipse	14.99	10.25
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Autodeal	Origin	24.99	16.50
Joe Blade II	Players	19.99	13.50
Captain Blood	Exxos	24.99	16.50

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Black Shadow	Elite	19.99	12.50
Blast Ball	Mastertronic	9.99	5.50
Borrowed Time	Activision	24.99	15.50
Brainstorm	Robtek	9.99	5.50
Cougans Run	Softgang	14.99	9.00
Diablo	Robtek	19.99	12.50
Eagles Nest	Pandora	19.99	12.50
Extensor	Players	9.99	5.50
Eye	Endurance	14.99	9.00
Feud	Mastertronics	9.99	5.50
Footman	Topdown	24.99	15.50
Frostbyte	Microvalue	14.99	9.00
Galactic Invasion	Microillusions	24.99	15.50
Goldrunner	Microdeal	24.99	15.50
Jump Jet	Anco	14.99	9.00
Karate Kid II	Microdeal	24.99	15.50
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Leviathan	English	19.99	12.50
Mach 3	Loricels	19.99	12.50
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Moebius	Origin	24.99	15.50
Ogre	Origin	24.99	15.50
Pink Panther	Magic Bytes	19.99	12.50
Plutos	Mastertronics	14.99	9.00
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Q Ball	English	19.99	12.50
Roadwars	Melbourne House	19.99	12.50
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Seconds Out	Tynesoft	19.99	12.50
Silicon Dreams	Rainbird	19.99	12.50
Slayton	Microdeal	19.99	12.50
Space Port	Reline	19.99	12.50
Starways	Robtek	19.99	12.50
Strange New World	Timewarp	19.99	12.50
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Terramex	G.S.E.	19.99	12.50
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Western Games	Magic Bytes	19.99	12.50

PLEASE CHECK AVAILABILITY
ON SPECIAL OFFER PRODUCTS.

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A.C./Basic	Absoft	195.99	132.50
Adrum	Bullfrog	39.99	32.50
Animator Images	Aegis	103.50	75.50
Arts Parts 1	Electronic Arts	9.99	7.50
Art Parts 2	Electronic Arts	9.99	7.50
Audio Master	Aegis	46.00	32.00
Award Maker		39.99	29.50
Aztec C Professional	Manx	199.99	132.50
B.B.S.P.C. Coms Pack		119.99	89.50
Butcher II	Eagle Tree	29.99	21.50
C. Library	Benchmark	79.99	60.50
Calligrapher	Interactive	89.99	72.50
C.L.I. Mate	P.S.S.	39.99	29.50
Comic Setter		69.99	50.50
Comic Setter Librarys (each)		24.99	18.50
Critics Choice		149.99	105.00
Data Retrive		57.99	42.50
Deluxe Music Con Set	Electronic Arts	69.99	50.50
Deluxe Paint II	Electronic Arts	69.99	50.50
Dluxe Photolab	Electronic Arts	69.99	50.50
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Deluxe Productions	Electronic Arts	139.99	115.00
Deluxe Video	Electronic Arts	69.99	50.50
Devpak Assembler	Hisoft	59.99	45.50
Diga	Aegis	57.99	42.50
Digicalc	Digita	89.99	69.50
Digipaint	Newtek	59.99	42.50
Digiview 3.0	Newtek	149.99	105.00
Digiview Adapter	Newtek	22.50	19.50
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Digiview Stand	Newtek	59.99	50.50
Director	The Right Answer	59.99	45.50
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Express Paint	P.A.R.	69.99	50.50
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Futuresound	Applied Visions	Phone for prices	
Goldspell 2		29.99	21.50
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Gabbitt	Discovery	29.99	21.50
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Home Accounts	Digita	29.99	21.50
I.F.F. Library	Benchmark	79.99	60.50
Impact	Aegis	63.99	44.50
Instant Music	Electronic Arts	29.99	21.50
Interchange		49.99	39.50
Itrocad	P.P.S.	59.99	42.50
K Spread 2		79.95	60.50
K Seka Assembler	Kuma	49.99	32.50
Kara Fonts	Kara	59.99	45.50
Kind Words	Disc Company	49.99	32.50
Lattice C 5.0		Phone for Price	
Light, Cameras, Action	Aegts	57.99	39.50
M.C.C. Pascal	Metacomco	89.99	69.50
Macro Assembler	Metacomco	69.99	50.50
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Marauder II	Discovery	39.99	29.50
Mixiplan A500	Oxxi	99.99	72.50
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Pro Board	Prolific	475.00	375.00
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Pro Sound Designer (H/W & S/W)	Eidorsoft	34.99	29.50
Pro Video CGI	J.D.K	159.99	127.50
Pro Video CGI Fonts	J.D.K.	69.99	50.50
Pro Video Plus	J.D.K	249.99	175.00
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Professional Page	Gold Disc	349.99	175.00
Project D		39.99	29.50
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HARDWARE LIST AS FROM THE 1ST OCTOBER 1988

	S.S.P.	OUR PRC
A500 Computer (Built-in Disk 3 1/2" Disk Drive AMIGA DOS Kickstart, Workbench 1.2, The very first)	399.99	350.00
A500 (As above) with 1084 Colour Monitor	699.00	620.00
A500 Business Pack	803.85	750.00
A500, 1084 Colour Monitor and AF880	705.99	665.00
AF880 (On/Off Switch thru Port) Disk Drive	110.00	95.50
MPS1200C Disk Drive	140.99	125.50
1084 Colour Monitor	349.99	290.00
1084 Colour Monitor & T.V. Tuner	305.99	287.00
T.V. Tuner	99.99	91.50
Cumana Amiga Drive Cax 354	99.99	91.50
Cumana Amiga Drive Inc P.S.U. Cas 354	150.99	130.00
Amiga Genlock (A500)	299.99	260.00
RF302C Slimline Amiga 2nd Drive	105.99	98.50
A501 1/2MG Ram Upgrade	175.99	150.00
A2000 (B)	1489.25	1275.00
A2000 (B) with 1084 Colour Monitor	1782.50	1439.00
A2058 (8Mb Ram Board-Populated with 2Mb)	746.35	620.00
A2088 XT Bridgeboard	607.20	555.00
A2286 At Bridgeboard	1148.85	995.00
A2092 20Mb MSDOS Hard Disk	402.50	375.00
A2300 Internal A2000 Genlock	286.35	250.00
A2010 Internal 3 1/2" Floppy Disk Drive	182.85	159.00

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A2024 HT RES Mono Monitor	764.75	701.00
A262OU Unix Card	1956.15	1755.00
14" Cotron Hi Res Colour Monitor	747.50	650.00
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Cherry Pad A3 Digitising Tablet	632.50	565.00
Video Driver Card (Must be sold with cotron)	396.75	350.00

A2000 SPECIAL OFFER (WHILST STOCKS LAST)

A2000B Computer with 1084 Colour Monitor and A2090/2092 20MB Amiga Hard Disk	2241.35	1970.00

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10 Blank disks with box	25.99	13.50
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Clik Amiga Specialists
Unit 1, (Dept NCE)Willowsea Farm, Spout Lane North,
Stanwell Moor, Staines, Middx TW19 6BW
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WE ACCEPT EXPRESS VOUCHERS



Dear Reader

We proudly present the liveliest, timeliest computer forum in Britain. Write to us about anything to do with computing – just so long as your letters are interesting or angry or opinionated or entertaining or, failing that, short. The week's most impressive epistle wins a mystery prize – we try to make it appropriate for the person concerned. Write to:

Express Mail, 4 Queen Street, Bath, Avon BA1 1EJ

Yours in anticipation,

The Express Editorial Gang

PS. Our replies are prefaced by a tick unless we largely disagree with what you say. Then you get a cross (and get cross).

PPS. Sorry, folks, no personal replies. We'll print it or bin it.

COMET NIGHTMARE 1

I recently decided to join the growing throng of PC users and accordingly, from my local Comet store, purchased a Sinclair PC 200.

Eager to try it out, I got home and opened the carton. The salesman had already explained that the monitor would take 10 to 14 days to deliver. However I could struggle in the meantime with the TV set – but this was not to be.

For from being ready to use, I discovered that there was

- NO operating manual
- NO operating MS-DOS software
- and NO leads.

So back to Comet. After searching through the rest of his stock, lo and behold none of them have any of these.

"We will have to order them from Sinclair," says the salesman. "It should only take a few days."

The few days pass and enquiries result in no joy from Comet. "Aha!" says I, "Amstrad who should value customer satisfaction should be able to help."

I phoned Amstrad who tell me, "Sorry, Comet should not be selling this model yet."

"But why?" says I. "The model has been launched – surely you can give me some indication when I can expect delivery?"

"No, sorry," says Amstrad.

So here I am having bought the hardware and software and paid in advance with nothing to show but a useless, inert PC 200.

Come on Alan Sugar. Please can I have the software to use the hardware for which I have already paid and end my futile cry of "Somebody please help".

EP Ingram, Paisley, Glasgow

COMET NIGHTMARE 2

My day of disaster:

1) Went to Comet to buy a PC200. Comet informed me there were no manuals.

2) Went home and unpacked PC. Lo and behold – no manual. And alas, no software.

3) Went to another Comet in town (Eastbourne). They informed me that all the computers received from Sinclair/Amstrad have no manuals or software with them and that the branch of Comet I bought the machine from should have ordered said items.

4) Went home and rang Comet. They have ordered said items (but forgot to tell me). I can get them (wait for it) in about seven days time. So I've paid £343 for a machine which I can't use until next week.

D Mitchell, Eastbourne, Sussex

✔The whole Comet/Amstrad PC 200 fiasco is covered at length on pages 2 and 11 of this issue. Presumably, if enough of a fuss is kicked up, then the problem will eventually be solved.

Those still experiencing difficulties with the machine should contact us as soon as possible. Indeed, if there are similar tales of woe about other machines, then please get it contact. We'll do what we can to investigate and solve your problems.

These letters are jointly the best of the week and so qualify for our special Mystery Prize. We could offer a day return to Amstrad's HQ in Brentwood, so that the complaints can be made in person. But better than that, we'll be sending a piece of high quality PC games software to each of you. Oh, and they'll have all the requisite pieces in place.

SHOWS ARE RIP-OFFS

I read with great interest your editorial comment on the poor turn out at the Commodore Show. A couple of years ago my son and I attended a Database show in Manchester, where the adult admission was £3. The "show" was abysmal. It amounted to no more than 20 or 30 small stands and a display of some new hardware. I promptly wrote an angry letter to Database and was sent a refund on the admission price.

My point? Perhaps all the people feeling dissatisfied at paying £5 for the Commodore and Atari shows staged over the last few weeks should also write and complain. To be charged for admission to what, in effect, is merely a large computer store is to my way of thinking a well executed rip off. I wonder if this concept will eventually be applied to its logical conclusion and we'll be charged admission to Tesco and Sainsburys.

Steve Morris, Leigh, Lancs

✔Shows are an integral part of the computing scene, but the buzz does seem to have gone out of many of them. Perhaps that's because we've all grown used to them: that there is an ever-lowering proportion of visitors and exhibitors who are there for the first time. Also, the computer press in general has become more adept at covering new products, which has arguably diminished some of their appeal.

That said, the better ones are more than "large computer stores". The Personal Computer show in September has always recorded year on year increases in attendance. At least it must be doing something right, even if some of the others apparently aren't.

COMM ON!

I would like to say that your magazine is extremely interesting and by far the best weekly computer magazine currently on the market. *(Go on then: feel free to say it – Ed.)* The wide range of computers that it caters for is a really good idea, even if some of them are a little obscure.

It looks to me as if Future Publishing is becoming a force to be reckoned with. My only complaint however is the lack of space given over to communications. A little while ago I read an article in one of your sister magazines *ST Amiga Format* which devoted four pages to comms. The telephone numbers of bulletin boards given in this article were by far the most interesting numbers I have ever got hold of. They gave me access to bulletin boards which were really enlightening and I still telephone many of them.

However, bulletin boards are a subject which is not given much space in magazines and I think that a regular page of BBs in your mag would be an excellent idea, especially since they are not machine specific.

I know I speak for many of my friends. So come on *Express*. Give the readers what they want.

Roger Davis, Southampton, Hants

✔Results from our survey suggest iriterest in comms, bulletin boards and the like is limited to a minority of users, albeit an active one. Having said that, there are good prospects of Express getting fatter in which case we could provide comms coverage without cutting elsewhere.

COLUMN WANTED (AGAIN)

I enjoy *New Computer Express* but it lacks one thing – a column for the 8-bit Atari range. These machines still outsell the QL, BBC and MSX, and unlike the QL are still being produced and advertised. The odd game review wouldn't go amiss either.

Steve Mitchell, Lincoln

✔We do try to cater for as many machines as possible. Ultimately, we're limited by space. It's possible that we'll have an Atari 8-bit column, but it will probably have to go in *even tinier point size than this to fit in.*

OF MODS AND MIDIS

As an absolute beginner (alas) and, shortly, the owner of a 16-bit machine (about which I do not understand a thing) I have only two things to say. As simply as you can, could you please tell me what a modulator is and what the word MIDI means, please.

E. Ourtois, Shiregreen, Sheffield

✔Easy enough. A modulator is a device which enables you to use an ordinary TV as your computer display. It converts the computer's output to ordinary TV signals – a lead from the modulator will connect into your TV's aerial socket and you simply select one TV channel to tune to the computer's frequency. MIDI (Musical Instrument Digital Interface – but you didn't really need to know that) allows you to program the likes of synthesizers and drum machines via a computer. At a wild guess, you're an ST personage...

SPARE THOSE BLUSHES

At last! A weekly magazine that's worth paying for! Congratulations on your equal coverage of all the major and some of the minor formats. Most mags just forget about things like the MSX, and although I don't own one, it's interesting to see what's going on in other formats. BUT...

A lot of micros are games machines, but remember the minority who use them seriously. I have a Spectrum +3, but it's used more for business and programming than games. So how about telling Robin Alway to cover that side of the Spectrum as well as the games?

Express Vouchers are a good idea, but remove the expiry date and make them collectable and they'll be a much better idea.

Users' programs – instead of short routines in the machine columns, how about one or two long contributions from the readers every week?

Finally, I disagree with Don Griffith when he calls Spectrums "the Skodas of the computer world". The Speccy may be old, but it's still the best value around.

Bryan Morton, Bangor, N. Ireland

✔Robin will be covering a number of serious applications for the Spectrum in the very near future (even though he dopesn't know about it yet).

The Express Vouchers are actually a brilliant idea. Doubtless hapless rivals will be tumbling in and out of meetings with their own schemes even as we speak. But the vouchers are simply not collectable, since that would ruin the logistics of the whole enterprise. Clip 'em out and bang 'em off – that's the principle. Or buy the next issue of the magazine for a fresh supply.

Users' programs would have to be very strong for us to use them. Long programs gobble up pages which can only be of interest to users of one machine.

As for Skodas (aka Spectrums), never

☞

● AFTERBURNER ST: IN DEFENCE

I write in reference to your ST *AfterBurner* reviewette in the November 26th issue.

Andy Storer, your games reviewer has some objections to the technical quality of our implementation of AfterBurner on the ST. I feel that he has a larger-than-life view of what an ST is capable of, and also that he is guilty of not reading the instructions for the game (aren't we all?)

The review stated that achieving a 360-degree roll is almost arbitrary and implies that it's difficult to do. The manual says under the heading "Rolling your F14" that in order to shake off enemy aircraft/missiles you must move from one side to the other in quick succession. This does indeed work, and works every time. In fact, a simple waggle once the joystick is at one side is all that's necessary! Since rolling is of great importance in *AfterBurner*, one wonders how Andy managed to do a full review if he was unable to roll properly.

Andy goes on to say that "the ground beneath you bears only passing resemblance to landscape". What does he expect out of an ST? Does he have any idea what sort of complex processing is going on to get a few objects on the ground?

Bear in mind that the humble ST, though powerful by microcomputer standards, is no match for an arcade machine with all its custom graphics chippery! Our *AfterBurner* code has all its own Enlargement and Rotation using software techniques, because we just don't have the 4 megs of ROM to pre-store everything!

We do feel we did the best possible conversion of a very difficult to convert CoinOp. You might argue "Why bother?" if the game was so difficult to convert. This is a valid point, and the simple answer is that if arcade licences are going to continue (and they obviously are) then at some point the arcade games are going to lose something in the translation to home micros. This is inevitable.

Reviewers of arcade conversions should be sympathetic to what the microcomputer is capable of and also be technically knowledgeable in what programming achievements have been made. What might not look so great next to a CoinOp machine, might be truly outstanding compared to other games of its genre.

At the end of Andy's review, he compares *AfterBurner* to *Space Harrier*, like comparing apples and oranges.

AfterBurner is a fast moving 3D game where the aircraft and horizon freely rotates about any axis! All the objects rotate and the technical achievement is far greater.

We think we did very well considering the limitations of the microcomputer, and of the timely completion for the Christmas season. If we had a few months' extra time, then we might have been able to incorporate some of the features that went into the Amiga version (out soon!) into the ST version...but you know what deadlines are like?! As it is, the ST version is the most complete, and probably the best looking version out. Even Sega's own version on the console is not that good.

As a final note, you used a really goddam awful screenshot of bare 'sea' with no ground detail, bushes, trees or buildings. Why? Was it just to prove your point that *AfterBurner* has unconvincing ground detail!!? The game has 23 stages of colourful ground objects, so why did you use the most boring, the most uncolourful stage to take your screenshots?

Jez San, Managing Director, Argonaut Software

Andy Storer replies :

The review could quite easily and fairly have been more critical of AfterBurner. I didn't even mention the dull gameplay – Hit Man Haynes dealt with that quite succinctly on the Spectrum version in issue 3 – so I thought I'd point out what I saw as its other failings.

I would argue that you simply don't need a technical understanding of a product in order to offer an opinion on its merits!

The prospective buyer is only concerned with how closely a conversion approximates the arcade version – and in those terms Space Harrier is a brilliant conversion and yours was disappointing. After all, we're talking about someone considering spending £20 to relive a great experience – not whether sprites are pre-stored or whether it's pushing their ST to its limits.

As for the 360-deg rolling – well maybe every joystick in the whole of Future Publishing is wonky. Or else I am.

Sorry about the pic. As you say, you know what deadlines are like.

PATIENT STABLE, PRICE CRITICAL

I have been suffering over the last five years from a terminal illness called the computer syndrome. All this began with a 32K BBC computer, upgraded to Master 512 with Gem and all the add-ons (printer, modem, dual drives), together with software like the complete *View* family and *Overview* and utilities to make life easier, and games.

I have them stored everywhere, so you might reply that life is rosy – but the 512 co-processor made my condition even worse, because by now I had sampled the delights of the IBM type market. So off I went and purchased an Amstrad 1640 HD ECD system and now, with the help of Sharewell and commercial software, can do all things that the heart desires.

But now to the purpose of this letter. The BBC equipment which is now under my desk is gathering dust, so I thought 'well, advertise it'. And the price? Well, I have had huge satisfaction using it, so for the complete system...£600.00.

Do you think this is unreasonable? Most enquiries about this system seem to think it is. There are also all the manuals plus *Beebug* to date and *Acorn User*. If you think this is reasonable and know of a good home for this system please put them in touch.

I am an addict of *PC Plus*, and now with a weekly mag with excellent content, my illness will surely finish me off unless she who must be obeyed gets to me first. Congrats, and thanks for the now-weekly injection.

P.G. Henry, Romford, Essex

✔No price is unreasonable if someone is willing to pay it.

If no one will pay £600, then the answer is obvious. Claim it's a unique opportunity to buy this comprehensive state of the art system, jack the price up to some extraordinarily implausible level, chuck in some arbitrary notional price of all the items bought separately, and you'll be well away. Repeat the process a few times, and you could set up in business.

You could probably get away with calling yourself Acorn.

mind the car analogy. Just try the old "If my machine were a TV programme, it'd be..."

A LONG LETTER

I am a first-timer and I can't understand some of the jargon on computers.

David Binns, Wolverhampton

✔That's not much of a boast. Some of us are eighth or ninth timers and we can't understand the jargon either.

COMMODORE BASHER

On reading *New Computer Express* I see that you also suffer from Commodore. I went to the show the other week to try to obtain the elusive *Workbench 1.3*. I asked a Commodore rep, Ian Bourne, who replied that it was not there but is being produced and would be obtainable next week. A friend that came with me at the same time asked another Commodore rep who said not for several weeks.

I then asked LANS of Romford. They asked me to phone next week, and they would inform me when they had made some enquiries – so I duly phoned today and they then replied it WOULD NOT BE OUT TILL AFTER CHRISTMAS!

This 1.3 was originally going to be available for the public in SPRING '88 (another wild promise from Commodore). It seems that no-one in Commodore knows what anyone else is doing or saying. It reminds me of the tale of the three blind mice!

Is this a ploy that they sell the new 2000 with the 1.3 now to push the sales and to hell with the people who have bought the 500?

As this seems the usual attitude of Commodore to their customers, I'm also wondering if the numbering at the show was a Commodore idea – stalls numbered from 1 to 348 but only 84 stands there?

N. Stone, Chelmsford, Essex

✔The Commodore crew get it in the neck so often that you can almost feel sorry for them. Almost.

Still, this case is not substantially worse than other companies promising releases and failing to deliver. Commodore will be releasing 1.3 at some stage in the very near future. Honest.

The show comment is a tad unfair. For one thing, the event was organised by Database – Commodore is just the sponsor. Secondly, many stands encompassed more than one stall.

MSXTRAVAGANT CLAIMS

Just a few words to say how I and, I know, lots of our Link members are very pleased about seeing your support for the MSX. I have had lots of people write in of late who are buying the new Philips MSX2s for Christmas for themselves and their children. Most of these people are ex-Atari ST and Amiga users, believe it or not. The reason is that people are sick and tired of buying Ataris and Commodores and finding that they are out of date before they are even plugged into the mains.

At least with the MSX, people can expand the outfit even up to ten years later with a hard disk drive, printer etc. – and every plug and socket is standard. It must soon become clear to people that they are spending £300-£700 on minority machines, like the ST, that cannot be updated or expanded later because they're replaced by another model type. People will soon say 'enough is enough'.

The MSX started in 1984 and is still going strong – although I must admit we do now have the MSX2 – and the MSX1 is still well supported in Europe and Japan. While the MSX is so big worldwide, software will be going strong long after STs etc are forgotten.

Another fact is that software houses can afford to spend more time making MSX programs as there are more machines for that format than lots of other types. Look what happened to VIC20, CBM Plus/4, CBM16, Dragon etc. No, with the MSX you are buying for today, tomorrow and even next year – not just until that computer shop has sold out its current window stocks.

David Webb, MSX Link International, Spalding, Lincs

✗We've had numerous charming, witty and sophisticated letters from MSX owners. So it's refreshing at last to get one that's completely and utterly bonkers. Many congratulations, David...

I'LL PAY £30

Congratulations on the new publication, and I wish you every success with it. Your competitors are doubtless quivering in their snow-boots for fear of losing all their readers to your infinitely superior magazine! I promise to buy it every week.

The layout, style and light mood make for an interesting read throughout, and I for one hope the magazine doesn't change to make way for the robots who drone and waffle on so – you know, the bumsters who seem to think that humour in the computer press is childish, undignified and beneath them. Schmucks!

As an Amiga owner, may I request that software houses be more thoughtful about releasing titles for this superb computer. Surely many, if not most, Amiga owners have upgraded from 8-bit machines not simply to get the 16-bit versions of *Pacman* and the like, although I'm not out to criticise any particular title or house.

I for one am willing to pay £15-£30 for good entertainment software that exploits the machine's excellent capabilities, and I do not want a load of guff that exploits me. I've got a couple of Spectrums (Spectra?) for that! (Only a joke, OK?)

Meanwhile, I continue to look forward to *New Computer Express* each week – it's suddenly worthwhile getting out of bed on Thursdays again.

Don Howard, Croxley Green, Herts

✔The quality of Amiga software is definitely picking up – at least from those publishers with the nonce to do something other than merely port over the ST version and bung another £5 on the price.

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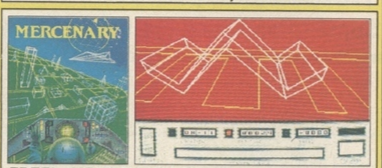
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Publish!

The Express Guide to DTP

Peter Worlock, who's published almost as many words as Rupert Murdoch (and better words at that), explains what DTP is all about and how you can get into it.

One thing the computer industry really excels at is selling you stuff you don't need. Have a look at your software collection – how many programs have you got that have never been used since the day you bought them? Look at the power of your brand-spanking-new 16-bit supercomputer and ask yourself how much real use you've made of all that technology?

DeskTop Publishing (DTP) can be like that. There's a definite appeal, especially if you're a bit of a techno-junkie because DTP is power computing – high-res displays, great graphics, all those typefaces. And there's something wonderful about seeing a computer display images that look like newspapers and magazines. But are you really going to use it? Are you, or do you want to be, a publisher? Surprisingly, the answer for thousands of computer users is a definite "Yes", even if they don't know it yet.

Who needs it?

Just because you don't publish a newsletter, or regularly produce large, glossy catalogues doesn't mean you couldn't make good use of a DTP set-up. Perhaps you recognise yourself among the following:

- **THE CLUB MEMBER.** This group has become a bit of cliche, thanks to the marketing efforts of dozens of publishers of low-cost DTP software, but that doesn't make it any less real. And it doesn't just apply to computer groups: there are thousands of amateur clubs devoted to sport, photography, astronomy, sailing, classic car building, amateur dramatics, parent-teach associations – just about every activity we indulge in for fun, or at least isn't done for profit.
- **THE PROPAGANDIST.** Something of an 80s growth area, this includes local politicos, No Nukes lobbyists, and all those millions of people who are trying to save the whale, save the church roof, foment the revolution, or stop the proposed ring road.
- **THE PART-TIME ENTREPRENEUR.** Perhaps you run a disco in the evening, or you repair cars at the weekend, or you do dressmaking, window-cleaning, woodworking – anything that earns a bit of cash.
- **THE BUSINESS PERSON.** Your business may not rival ICI, or British Airways, or Ford, but it's yours, you take it seriously, and you're always on the look-out for anything that's going to help your company, or improve your service.



● **THE EXECUTIVE.** Another DTP cliche, thanks this time to Apple's TV advertising, but – again – Apple targetted this group because they are prime potential buyers of DTP systems. Business is competition, and you're interested in anything that offers you an advantage.

It should be obvious that these five categories cover an awful lot of people. In fact, if you stretch the definitions just a little, they cover just about everyone in the country.

But a common reaction goes along the lines of, "Look, I run a small antiques shop/role-playing game group/hill ramblers society. I don't need to produce a newspaper every month."

Indeed you don't. Which leads to the next question ...

What is it?

Put at its crudest, desktop publishing is simply the process of putting words, or words and pictures, on paper. Nothing less, and often not a great deal more.

The common perception of DTP as the production of newspapers, newsletters, magazines, and glossy business brochures and reports arises because that's where most of the attention has been focussed, especially in TV advertising, and in the national press.

Of course, those are useful, valid things to do with DTP, but you can do a lot more than that. Desktop publishing is simply personal publishing, and publishing is just passing information around a few people.

So the antiques shop owner can produce a catalogue of his or her wares to be handed out to potential buyers. Desktop publishing means it can be very professional in appearance, quite cheap to produce, and it can be updated regularly without costing an arm and a leg.

The dungeon master from the role-playing group can produce maps, character lists, adventure itineraries – anything that will help his players to get more out of the game, as well as making his own part easier and better organised.

Glossary

A guide through the jungle of Desk Top Publishing jargon

Body type

Any typeface used for long stretches of text, as opposed to headline and display typefaces which are used for short, eye-catching text.

Bold

A variation on a typeface in which the strokes of the letters are **thicker and print blacker**.

Column

The basic division of text on a page. *Express* uses three or four-column pages; newspapers may use six or eight columns per page.

Condensed

A useful type variation in which all the letters are squeezed. This can make a big difference to the quality of design – unfortunately, very few DTP programs support it. What most DTP programs call "condensed" simply strips out the spaces between letters.

DPI

Dots per inch, the measurement of resolution in printers and screen displays. The higher the dpi, the better the quality of the resulting image. The measurement is in one dimension only – a 50dpi device will ouptut up to 2500 dots per square inch of paper. Do not confuse printer resolution with grey screen resolutions. Here a typesetter set at 1270 dpi has produced a 115dpi grey screen running behind this text – each dot making up the grey screen is made up of up to 122 (the square of 1270/115) of the typesetter's smallest printable dots.

Drop cap

A useful typographical device in which the first letter of a section of type is typeset at a much larger size and positioned so that it descends into the rest of the type.

Em

The common measurement of column-widths – the em is 1/6th of an inch and this column is roughly 10 ems wide. Is also used as the width of the letter 'm' in any given type-face and size. As in "there is a one em indent at the start of this paragraph."

Font

The group of letters, numbers and other characters that make up one variation on a typeface. It does not mean the typeface itself. So Times and Glypha are typefaces, *7pt Times Italic* is a single font, **6pt Glypha Bold** is another font, and so on. You often see printers advertised as having "8 fonts", but this usually means they have only two typefaces.

Hyphenation

The splitting of words at the end of lines to give consistency in the number of characters in a line. You get more words per column inch and fewer ugly spaces.
The words in this line fit nicely through hyphenation. And there's more space to play with.
These words are widely spaced because hyphenation has been switched off.

Italic

A type variation in which the letters slope forward.

Justified

The style of typesetting in which all the type lines up at both left and righ-hand edges. (See also "Ragged".)

Kerning

The process of reducing the amount of space between specific pairs of letters to improve the appearance. Without kerning, certain letters – like F, P, T, V, W, Y, A– create ugly white spaces in words. Spot the difference between WAVY and WAVY.

Leading

Pronounced "ledding": the insertion of extra white space between lines of type to improve readability. 8pt type should normally be set at 9pt leading – so that there's at least 1pt white space between lines. This paragraph has had its leading removed and you can see how much less readable it is.

Lower-case

the smaller, non-capital letters in a typeface.

Outline fonts

A way of handling fonts to produce better quality output. Computers use bit-map fonts which print well in certain type sizes but distort when you increase or decrease the size. Outline fonts can be blown up or shrunk without any loss of quality.

Page printer

The collective term for high-quality computer printers. Not all of them are laser printers: others use different technologies like LEDs, liquid crystal shutters, and ink-jet. All will produce laser-quality output.

PDL

Page Description Language, a special program that allows a greater degree of printer control producing better-quality type and graphics. PostScript and Hewlett-Packard's DDL are the two leading PDLs.

Point

The universal measure of type size. There are 72 points to the inch but, confusingly, 72pt type will not be one inch high. The point size refers to the depth of the line, so with two lines of non-leaded 72pt type, the distance from the top of one line to the top of the next, including the space between lines, will be one inch. This type is 6pt and the headings are 9pt.

Ragged

The opposite style of typesetting to justified, so that lines of type do not line up. It usually applies to the right-hand edge, but can refer to the left. Most word processors and many desktop publishing programs refer to this as unjustified.

Reversal

Any bit of text or graphic that is printed white on black, instead of the normal black on white. Computer terminology usually calls this process "inverse".

Scanner

A neat gadget that works like a photocopier, but instead of producing a paper copy it sends the image to the computer where it can be edited and then used by DTP or graphics program.

Typesetter

A machine that produces professional-quality type. A typesetter has a resolution far higher than even the best laser printers. And they cost upwards of £15,000.

WYSIWYG

What You See Is What You Get – usually applied to software that attempts to display on the computer screen a very close approximation of what will be printed.

Six of the best

The DTP programs we consider the best value for money. All prices include VAT.

STOP PRESS

Amstrad CPC (£49.99), Amstrad PCW (£49.99), BBC (£49.99) and CBM 64 (£39.99)

A low-cost, versatile package aimed at home users. Includes good graphics functions. If you want to have some fun producing newsletters and the like with a home computer and dot-matrix printer, this package is well suited. The package can also be bought bundled with a mouse (much easier to use than with keyboard only) for an extra £30-40.

Supplied by **Advanced Memory Systems** (Tel: 0925 413501)

FINESSE

PCs (£115)

A professional program at very competitive price. Easy to use, flexible, powerful graphics and text handling. Can be purchased with a mouse (£50) and a low-cost scanner (£285).

Supplied by **Advanced Memory Systems** (Tel: 0925 413501)

FLEET ST PUBLISHER

Atari ST (£125)

A package that's particularly strong on typography and capable of outputting to a wide variety of printers. Available from Atari as a package bundled with Mega ST and laser printer.

Or call **Mirrorsoft** on 01 377 4644.

(This package is far stronger than Mirrorsoft's *Fleet Street Editor* series on Amstrad CPC, PCW and PC.)

TIMEWORKS PUBLISHER

Atari ST (£99) and PC (£129)

A powerful package ideally suited to fast production of reports, manuals or documents with relatively simple layout.

Supplied by **Electric Distribution** (Tel: 0954 61258).

PAGEMAKER 3

Apple Macintosh (£626.75), PC (£799.25)

The original version of this program on the Mac is credited with sparking the worldwide boom in desk-top publishing. Now substantially improved and available on PC as well as Mac. Powerful software aimed at professionals. Has the advantage that any DTP typesetting bureau will be able to output Pagemaker files on a typesetter or laser printer.

Produced by **Aldus** (Tel: 031 336 1727)

PROFESSIONAL PAGE

Amiga (£249)

The package aimed at making the Amiga into a better DTP machine than the Apple Mac. Powerful, box-based layout system includes colour facilities and numerous other features. Requires 1mB and is intended for use with at least a laser printer.

Distributed in the UK by **HB Marketing** (Tel: 0895 444433)

Others to look out for

ST and Amiga owners should keep an eye open for the much-touted *Page Stream* from US house Soft Logic, shortly to be released in the UK by Silica Shop. Atari are also making excited noises about their forthcoming *Calamus*.

Two superb programs for professionals are *Express* (from Quark) for the Mac at £695+VAT and *Ventura Publisher* (from Rank Xerox) for the PC at £795 +VAT. This magazine, appropriately enough, is laid out using *Express*.

And the secretary of the hill-ramblers association can also produce maps and guides for the club's weekly outings, providing more information for members, and making the walks more enjoyable.

You can use desktop publishing in an enormous number of ways:

- **ADVERTISING LEAFLETS** – put out single-sheet flyers for anything from your part-time window-cleaning business, to the spring sale at your used-car dealers, from the church Christmas bazaar to the end-of-term school concert.
- **CATALOGUES** – from the small business to the large corporation, many companies can benefit from having catalogues available both for internal use and for customers. Tie in your client database, or inventory software, and updates can be done quickly and easily.
- **MAPS** – one of the most useful kinds of graphic, maps can be both informative and attractive. Use them in their own right (like the rambler's club), as agitprop (to show the proposed new road carving through the local beauty spot), or as simple helpers (how to find your new showroom).
- **REPORTS** – effective presentation can mean the difference between success and failure, whether you're a small company pitching for a job, or a corporate department trying to land a new project, or a local organisation trying to sway the council planning committee. By clearly laying out your arguments, linked to charts, graphs, and diagrams, you're giving yourself the best chance of success.
- **NEWSLETTERS** – an obvious application but it isn't confined to large companies. Clubs and societies are natural candidates – but what if you're a specialist company selling an unusual product? An occasional newsletter for existing and potential clients showing how your product is being used, and how to get the best from it, could get you a lot of attention in your market.
- **FANZINES** – amateur magazines for specialist markets, fanzines don't have to be cheap and nasty. In the science fiction field, for example, the better fanzines are highly respected by authors and professional publishers, as well as fellow enthusiasts. Although they are usually associated with the fields of criticism and review, you could establish your own in any area. Don't plan on making any money but you should find it a lot of fun and very rewarding in every sense except the financial.

What do you need?

The equipment for desktop publishing falls into four categories: computers, software, printers, and other stuff.

COMPUTERS

Any computer, from a Spectrum or C64 to a PC or Apple Macintosh, will let you get going in desktop publishing. What changes is the cost, and how easy it is to achieve what you want.

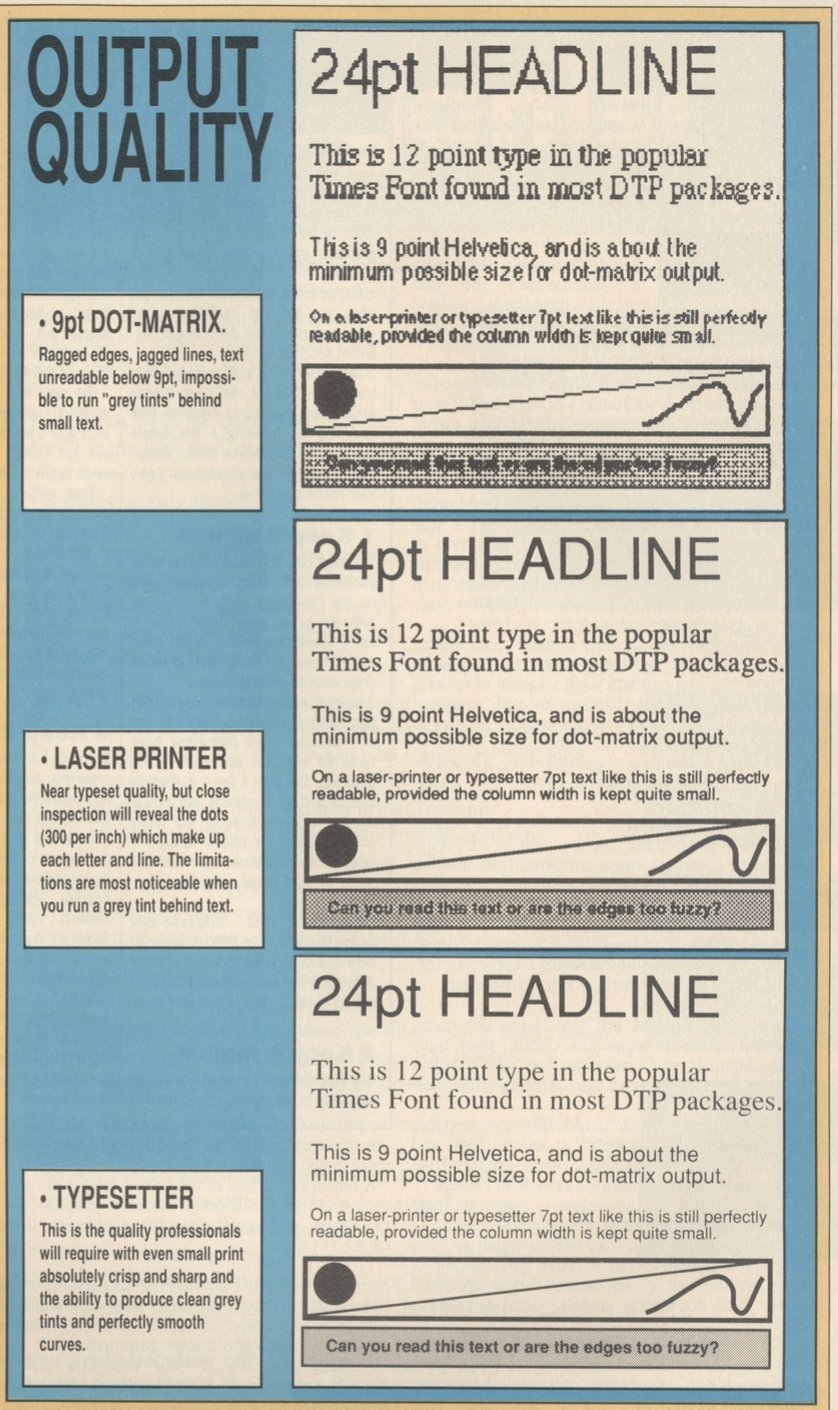
At a very low level of DTP – producing advertising flyers, for example – an 8-bit machine like the C64 or Amstrad CPC is capable of producing results as good as those from machines costing hundreds of pounds more.

Higher up the scale – producing documents that need professional looking typography and high-resolution graphics – you can still use cheaper computers but their lack of power starts to show. But at this point the quality of software and printer matters more than the computer.

An Amstrad PCW will produce documents as good as those from a PC or Mac. Of course, it will take you longer to do the job, and it might be a frustrating experience, but your readers need never know the difference.

When you get to the level of producing newsletters and fanzines, you really need some raw computer power – lots of memory, hard disks, and fast processors. That isn't to say you can't do it on a machine like the C64, or even a cheap PC clone, but it will be slow going. However, Atari STs and Amigas are perfectly capable.

Finally, at the professional publishing level, you need a Macintosh or a top-end PC, and the bigger versions at that. *New Computer Express*, like all of Future Publishing's magazines, is produced on expanded Mac IIs – no other computer could do the job. You need multi-megabyte memories, large hard disks and real powerhouse processors.



SOFTWARE

When it comes to DTP your choice of software is usually far greater than your choice of computers.

For the simpler tasks, a standard graphics program will suffice. Most "drawing" programs allow you to mix text and graphics on page, although the text control probably won't be sufficient to handle large slabs of text. But if the program gives you a variety of typefaces, styles and sizes it will probably cope with leaflets, simple brochures and very simple newsletter-style layouts.

If graphics are a secondary consideration you may not need anything more than a good word processor. There are several suitable programs on the PCW, ST, Amiga and PC which provide reasonable typographical control – more than enough for producing well-designed and eye-catching reports.

Some do allow you to import graphics into your documents, and a few let you create text in multiple columns. These may be better suited to producing newsletters than some 'real' desktop publishing software. The limitations are usually that such programs don't provide a great range of typesizes, and they will be short on the features that make page layout easier.

Finally there are the DTP programs proper. Because they are dedicated to the task, they have a host of facilities to make the would-be publisher's life simpler. At the least they will support multiple-column layouts, allow you to import a variety

of graphics and to edit them, and offer a good deal of control over the appearance of text.



More powerful programs include a greater number and variety of typefaces, advanced text-handling like hyphenation, fine control of type size and style, and the ability to "chain" columns and pages so that text can be flowed and reflowed automatically. Welcome "extras" include things like the ability to automatically run text around irregularly shaped graphics, and perform spell-checking on imported text.

PRINTERS

Since the aim of desktop publishing is to put information on paper, a printer is a crucial part of your set-up. Many people assume that you need a laser printer for DTP but that isn't so – there are other alternatives, better or cheaper depending on your needs.

If you want the best output quality, laser printers just aren't good enough – you need a true typesetter. Laser printers have a resolution of "only" 300dpi whereas a typesetting machine boasts from 1,200dpi up to 2,500 dpi. A resolution of 1,000 dpi is generally accepted as "typeset quality", so laser printers have a long way to go.

Unfortunately, that quality doesn't come cheap, and a low-cost typesetter starts at around £20,000. But you can still avail yourself of typeset quality even without that sort of cash to spare. The answer is to send your documents on disk to a typesetting bureau. In descending order of availability, bureaux will generally accept Macintosh, PC, Amstrad PCW, Atari ST and Amiga disks.

If you don't need true typeset-quality output, page printers offer the next best thing. At 300dpi resolution (although there are one or two offering 600dpi) there is now an enormous choice in page printers. The majority are laser printers with prices from £1,200 up to £10,000, but other options include the Qume Crystalprint with prices from £850, and Hewlett-Packard's Deskjet, an ink-jet printer which offers 300dpi resolution for around £700.

Next down the list are the 24-pin dot-matrix printers. Once an expensive option, they have been falling in price over the last year and are now the fastest-growing part of the printer market.

Models from Epson, Amstrad, NEC Star, and Citizen are all widely available at around £300 and offer a theoretical resolution even greater than that of most page printers – as much as 360 dpi.

However, this is theoretical – only the most expensive impact printers are accurate enough to rival laser quality, and they cost as much as laser printers themselves. The other advantages of page printers are speed – about five to ten times faster than dot-matrix models – and near-silent operation.

But for most amateur needs – club newsletters and the like – a 24-pin printer can be a good choice, offering an excellent compromise between print quality and price.

Finally, for those on a very limited budget, are the common 9-pin dot-matrix printers.

Surprisingly, the best of these can produce output quality close to that of their more expensive 24-pin cousins. This is achieved by using multiple passes of the print-head and the price paid is a drastic lack of speed – a typical newsletter page could take ten or 15 minutes to print, and the racket is deafening. But with prices well under £200, they needn't be ruled out.

There is one area where amateur publishers have the advantage over professionals: colour output. Of course, the quality is not going to be high, but neither is the cost.

For very simple colour work, you can use one of many dot-matrix printers which support colour ribbons. These will only give you a limited colour range – from eight to about 32 shades – but a bigger problem may be getting your DTP software to drive such machines.

A better bet is one of the colour ink-jet printers. Canon, Xerox and Hewlett-Packard produce high-resolution, multi-colour machines at prices from £500 to £1,000.

OTHER STUFF

Although you don't actually need anything more than your computer, a printer and some suitable software, you'll find life as a desktop publisher easier with some additional equipment.

Heading the list, if your computer doesn't already have one, is a mouse. If you're working exclusively with text a mouse isn't quite as essential, but for any work involving graphics a keyboard, or a joystick, just isn't good enough.

Unless you're a first-class artist and illustrator, you'll find your documents will look decidedly dull without some form of graphics. Fortunately, there's a solution in a class of software called "clip-art". These packages are simply collections of pictures which can be cut and pasted into your DTP layouts, and include animals, buildings, cars, famous faces, a multitude of objects like bats, balls, books, records, furniture, and trees, and collections of symbols like road traffic signs, pointing hands, arrows and so on.

And under the category of "desirable but not necessary" comes a graphics scanner – a device that lets you copy photographs, maps, diagrams and other illustrations into your computer and then into your DTP documents.

Until recently scanners were beyond the budget of anyone but large companies, however a new class of scanner has arrived this year – hand-held models with smaller scanning windows and a lower resolution (usually around 200dpi).

However, they produce good quality output and the price is right – around £200-£300. Models are available for PC-compatibles, the ST and Amiga.

If you don't own one of these 16-bit machines, all is not lost. There is a second category of picture-grabber, the video digitiser. Rather than scanning printed artwork, digitisers grab graphics frames from a video source like a standard video camera, or your domestic video recorder. With a camera you can, of course, point and shoot any graphics image, including printed material.

The cost of a digitiser itself is usually quite low – anything from £60 to £200 – but you need to add in the cost of a camera, and they tend to be expensive. But if you already have a video camera, this could be a cheap way of getting extra use from it.

So there you have it. Whether it's for fun or your full-time work, your computer can transform your power over print.

Happy dreaming, happy publishing. ●

Design tips

Four principles to make pages look good.

Most people can lay out a letter, or any word processed document, so that it looks neat and businesslike. But as well know, it tends to look a bit boring. How much better if you could put in a few graphics, and add some typographical variation.

But as many users have discovered, when you get that flexibility all too often your previously dull-but-neat document becomes a mess.

Design is a real skill requiring both training and talent. But that doesn't mean your documents have to look appalling. By following a few simple rules, you can produce clean, attractive documents that at least don't give your readers eyestrain.

1 Keep it simple.

The most common mistakes in desktop publishing arise from beginners trying to use as many features of their software as possible. They throw in every available typeface, in an enormous range of sizes, with graphics dropped in all over the place.

Instead, concentrate on one style of type for most of your text, and only one or – at most – two contrasting typefaces for headlines and other special purposes. Use only a few variations in size, especially in reports and similar documents where three or four levels of importance are usually enough to denote major divisions, main sections within those divisions, and minor subsections.

Newspaper and magazine-style design is much more difficult, but even here you don't need to use dozens of different typefaces. Your main tool here should again be variations in type size.

2 Keep it logical

Different styles and sizes of type act as signposts to the reader, so you need to use those signposts in a logical way. Large headlines instantly denote important subjects, and bolder type is more eye-catching than light. Use type that fits the subject and its importance.

Once you've worked out a scheme for your typography – what typefaces are used with which subjects, and how large a heading different subjects should have – stick to it. Don't arbitrarily use larger or smaller body type just to make text fit the space available.

Use rules and boxes to keep related material together and separate subjects apart, but don't overdo it – aim to use just enough design devices as it takes to get the job done.

Keep pictures and other graphics close to the text they apply to, and use them at a suitable size. A picture should be large enough so that readers can see what they're supposed to see, but not too large so that it overwhelms the page. Don't use clip-art too big – those little graphics are meant to add a little relief to a lot of text. They aren't meant to be the showpiece of your document.

3 Keep it suitable

Don't try to design your business reports to look like tabloid newspapers, or a leaflet for the social club dance to look like the Financial Times.

Try to use type that is appropriate to the purpose. Serif faces tend to be rather old-fashioned, sombre and businesslike, although some have a less studious, more elegant appearance. Sans serif types are bolder and brasher and give a document a more modern appearance. And there are hundreds of "display" types – oddities that have been designed for special purposes. You can make good use of these in advertising leaflets and the like, but they really have no place in a newsletter or a report.

4 Keep it clean

Not an exhortation to avoid four-letter words, but a plea for readability. Obvious sins including cramming too much into a small space, not leaving large enough margins around your pages and between different items.

As a rule of thumb: there should be more space between the lines than between the words, and there should be a lot more space between the words than between the letters. Aim to separate different items by at around 1em, or a sixth of an inch.

Less obvious are certain aspects of typography which govern readability. For example, words printed in lowercase are much easier to read than those all in upper-case (especially if several lines of uppercase type are used), and italics are usually harder to read than normal type. So use capitals, italics, bold and underlined type sparingly.

The size at which you set type also affects readability. Obviously, very small type is hard to read, but large type strains the eyes too so keep stretches of large type to a minimum. Much of this magazine is set in 7pt which is about the minimum for easy readability. However it is impossible to give absolute advice on how small you can go, because it depends on the typefact, the method of printing and the length of the item of text.

Watch out too for the width of columns. If there are too many characters across a column, the eye quickly loses its place. But if columns are too narrow justification will be nigh impossible, and the eye tires because it has to do a lot of jumping backwards and forwards.

Deciding the correct column width doesn't depend on physical measurement – it depends on the numbers of characters you can get in a column. Generally, about 35 characters should be the minimum, and 70 the maximum. (This consideration alone will help determine the size of type you should be using.)

Want to know more?

Peter Worlock is the author of *The Desktop Publishing Book* published by Heinemann at £12.95. ISBN 0-434-92369-9. An excellent source for more info.

The Disk Organiser

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▲ Main menu

Disk	Note	Date read	Free space	Drv
AGA2	AGENDA APPLICATION	22 NOV 88	37888	A:
AGA3	AGENDA UTILITIES	22 NOV 88	14336	A:
BANY	BANYAN SCREENS	22 NOV 88	248832	A:
DORG	Disk Organiser Master	22 NOV 88	224256	A:
DOSM	MSDOS MASTER V.3.2	22 NOV 88	3072	A:
FIN1	FINANCIAL CONTROLLER 1	22 NOV 88	203776	A:
FIN2	FINANCIAL CONTROLLER 2	22 NOV 88	25600	A:

▲ All disks in your library

Filename	Date	Size	Note	Disk	Folder
001.PIX	22 NOV 88	2240		BANY	\
002.PIX	22 NOV 88	1962		BANY	\
003.PIX	22 NOV 88	2411		BANY	\
1ST_MAIL.APP	22 NOV 88	72682		1W+U	\GEMAPPS
1ST_MAIL.RSC	22 NOV 88	9858		1W+U	\GEMAPPS
AA.CHT	22 NOV 88	9868		AASD	\
AA.EXE	22 NOV 88	382376		AAPD	\
AA.HLP	22 NOV 88	94884		AASD	\
AA.PRM	22 NOV 88	3181		AASD	\
AACOPY.EXE	22 NOV 88	12447		AASD	\
ABC.BAT	22 NOV 88	226		ABC1	\
ABC.HD	22 NOV 88	74		ABC1	\
ABILITY.BAT	22 NOV 88	37		A+S1	\
ABILITY.HLP	22 NOV 88	76718		A+S1	\

▲ All files in your library

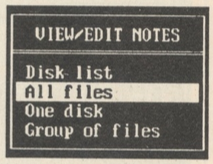
Filename	Date	Size	Note	Disk	Folder
AGENDA.HLP	22 NOV 88	40338		AGA3	\
BROTHER.PDF	22 NOV 88	2187		AGA3	\
CITOHPRO.PDF	22 NOV 88	2258		AGA3	\
CLRIBM.SDR	22 NOV 88	4415		AGA3	\
CLRLOT.SDR	22 NOV 88	5441		AGA3	\
CMNLBP82.PDF	22 NOV 88	2329		AGA3	\
CONFIG.PMG	22 NOV 88	17986		AGA3	\
D.ACC	22 NOV 88	15186		AGA3	\
DBL063B.PDF	22 NOV 88	2116		AGA3	\
EMAIL.DEF	22 NOV 88	372		AGA3	\
EMAIL.TXT	22 NOV 88	3159		AGA3	\
EPSOM.PDF	22 NOV 88	2293		AGA3	\
EPSOM8E.PDF	22 NOV 88	2462		AGA3	\
EPSOMFX.PDF	22 NOV 88	2347		AGA3	\

▲ All files on one disk

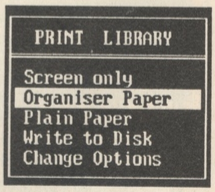
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★ Prints reports on enclosed personal organiser stationery
★ Prints reports of all files referring to disk/directory on which they're stored
★ Prints reports by disk detailing file/folder contents
★ Prints reports by folder/directory detailing file contents
★ Prints reports listing all disks/directories held in the library
★ Prints reports by file type/size
★ Prints reports by date created/last amended
★ Prints reports detailing all files NOT backed-up

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★ Stores your print-outs in a personal organiser binder
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★ Lets you record which files were sent to which people
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★ Lets you optimize the use of your disks
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Wot's this eunuchs, then?

Unix has been touted as the next big thing for aeons. But what exactly is it? And what does it mean for ST and Amiga owners? Peter Worlock explains all

After two years of sleepless nights learning to program your Atari ST, you're gripped with terror at the news that Atari is about to launch a new ST with a new operating system. You'd just reached mastery of the Amiga CLI with a shred of hair left unpulled when Commodore announced its plans for a new Amiga running this same new OS.

You're not alone – even PC and Macintosh owners share your fears. Across the world, personal computer users huddle together in the warmth of their familiar operating systems and cry, "What is this beast?"

But fear not. *Express* is here to run a soothing hand across your fevered brow, and to murmur: there, there! Everything will be all right.

What is it?

Unix is a monster operating system that literally "grew out of" Bell Labs, one of America's foremost computer research facilities, back in 1970. It was originally designed to be a multi-tasking, multi-user operating system which made it big to begin with. Then, over the years, extra facilities and utilities were added, making it bigger still. A "complete" version of Unix today requires a lot of memory to run – 8 megabytes is usually sufficient – and even more disk space.

But size is only half of the problem with Unix. As all programmers know, a lot of code takes longer to run than a little code. And Unix is a lot of code. To get it to operate in reasonable time, you also need powerful computers: 32-bit processors, and fast ones at that.

If you know MS-DOS, or the Amiga CLI, you probably won't have much trouble understanding what Unix is. You would, however, struggle to get familiar with multi-tasking since the Amiga arrived – it's just a process whereby the computer can do several things simultaneously.

Similarly, multi-user computing is not too difficult a concept. You could take a machine like the Amiga and instead of having one user perform several tasks, you allow several users to do one task.

What makes Unix different is that it allows several users to do several tasks each, simultaneously. Now you begin to see why it's such a drain on hardware resources.

And there's one final aspect of Unix that makes life even more complicated. Unix itself was written by computer experts for other computer experts – mere mortals find it impossibly difficult to use. So the various suppliers of Unix have come up with a bewildering variety of graphical front-ends – like the Mac operating system, or Gem – that look similar but work in subtly but significantly different ways.

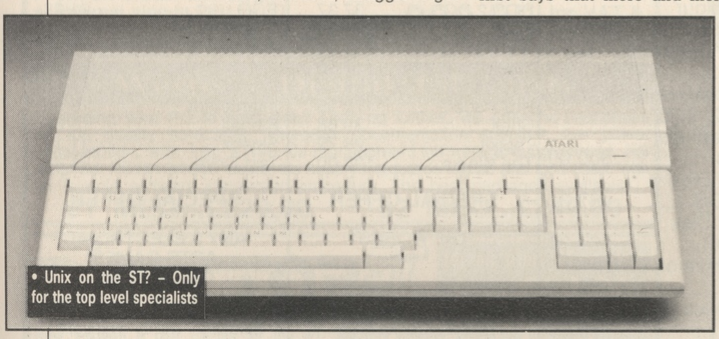
So Sun offers *SunView*, Jobs' NeXT offers *NeXTstep*, AT & T will sell *Open Look*, MIT offers *X-Windows*, and these are just the best-known.

Who wants it?

Because it is multi-user and multi-tasking, Unix became popular in large-scale computer installations, especially universities and scientific and engineering environments, and it's more or less confined to those places today.

However, it is finding a new home among heavyweight, professional publishing operations (the Open University, for example, does all its publishing on a Unix-based publishing system) because – given its background – Unix has always been strong on both graphics and text-processing.

A newer development is Unix in business. There are two schools of thought on this one. The first says that more and more businesses need multi-user, multi-tasking computing, and that means Unix. The second line goes like this: having spent years working with Unix at University, new recruits take a quick look at what their new employers are using, then make a beeline for the boss and say: "The hell with this stuff, get me a Unix system".



• Unix on the ST? – Only for the top level specialists

it to do anything since its commands are irritatingly different and among the most obscure in the entirety of computing. For example, the command to copy a file is CP, to get a directory the command is LS (for list), and if you want to type a file to the screen the command is CAT (short for concatenate, apparently)

There's also the multi-user, multi-tasking aspect which needs some explanation. Most of us are

The people who don't need or want it are people like you and me – ordinary users of 'personal' computers. Unix is a lot of things, but 'personal' it isn't. Besides, it simply won't run on the kind of computers we can afford (sub-£1,000) and on current systems costing less than £3,000, Unix is a ball and chain, crippling your processor and eating up your disk space.

So why the sudden boom?

In one sense, there is no boom – the "Unix is coming" story has been running for five years now.

What's new is that we're about to get a new breed of personal computers powerful enough to house the beast. On the one hand, PC-compatibles using Intel's 32-bit processor, the 80386, are dropping to sub-£2,000 levels; on the other, both Atari and Commodore will launch ST and Amiga versions using Motorola's 32-bit processor, the 68030, with prices somewhere around £1,500 – £3,000.

Other newsworthy events that have given impetus to the Unix story include the long-awaited launch of the NeXT computer, Apple founder Steve Jobs' latest project, which runs a Unix operating system; and Toshiba's introduction of a Unix portable – something few people would have believed possible just a short time ago.

Whether you think there's a demand for Unix on small computers is largely a matter of personal philosophy. The anti-Unix group believes in 'personal computing' – one machine with all the power for every user. The pro-Unix group believes that multi-user, multi-tasking machines are the way of the future, not only in business but for everyone who uses a computer. A third group agrees with the need for MUMTs but thinks Unix is too big and clumsy to do the business.

Relax – they'll never find you

American commentator John Dvorak reserves a special brand of vitriol for Unix. In one of his more printable observations he called it a "hard-to-use, techie-nerd operating system". The majority of personal computer user would certainly agree with that.

But there's no need to worry. Neither Atari nor Commodore, nor anyone else, is going to ditch its existing operating systems in favour of Unix. However, most manufacturers will offer it as an alternative.

Why? Because even though Unix is rarely found outside of research labs, universities and specialised areas of large corporations, manufacturers like Atari and Commodore hope that Unix will be the ticket that gets their computers in. ●

Atari plans its Unix assault

Why is Atari poised to launch a Unix system? Atari UK's technical manager Les Player says: "Although our point of contact with Unix is the universities, we are gradually finding that more and more large organisations are investing in Unix for the future."

So Atari sees Unix as completing its computer range: STs for home, education and small businesses; PCs for mainstream business applications; and Unix systems for specialised areas in education and business.

"We have two types of hardware for Unix," Player says. "The first is the 68030-based machine which runs Unix System V. That's intended for existing Unix users who want 'real' Unix.

"Second, there's the Transputer-based system which runs Helios, and Helios is largely Unix.

"But we certainly won't be dropping the TOS/Gem system on the STs – we are talking about two completely different hardware lines. The STs run from £299 to £999, while the Unix systems will be priced around £4,000 when they are launched in the first quarter of next year.

"I don't think any ST owner has to worry about seeing Unix."

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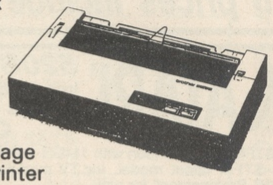
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The Alan Sugar Story

The birth of a notion: the CPC



• The old model Alan Sugar, circa 1984

Part III: William Poel relates the inside story of Amstrad's move from hi-fis to micros

Amstrad was a successful lowbrow purveyor of audio equipment with more knobs and flashing lights than critical accolades by early 1983. Yet within months it was transformed, and had even won its first *Which?* Best Buy (for a computer of all things!). How?

A brief resume of the product line after record player tops reveals the firm adopting the Japanese technique of spotting a trend and then distilling the salient features of an expensive and up-market implementation in a product that the lorry driver and his wife could aspire to, and afford.

This is no mean feat, and displays that Amstrad's greatest strength was from the very inception of the business to recognize what the mass market was asking for, rather than striking some statuesque pose behind the veils of "High Fidelity", and ending up in a respected but niche (i.e. small) marketplace.

There was a period around 10 years ago when the hi-fi marketplace burst forth with the "separates" business. The matched tuner, amplifier, record deck and speakers became all the rage, and remained the rage for quite a while as the product evolved through the valve and on to the transistor and integrated circuit. Amstrad produced a range known as the *Integra*, which employed the features of the desirable but unaffordable, and managed to assemble them together in a box that looked the part.

However, Alan Sugar wasn't really after the accolades and best buy labels from such noble organs as *The Gramophone*. As ever, he wanted the mass market. So what's a little hum amongst friends? The rustle of Yorkie bars being unwrapped and rumble of lorry engines outside the council flat would probably drown them anyway. And the volume control would only get a bit noisy if you kept fiddling with it...

In other words, Amstrad played the percentages, and quite rightly realised that most users would be willing to put up with a few rough edges when the product was basically good value for money.

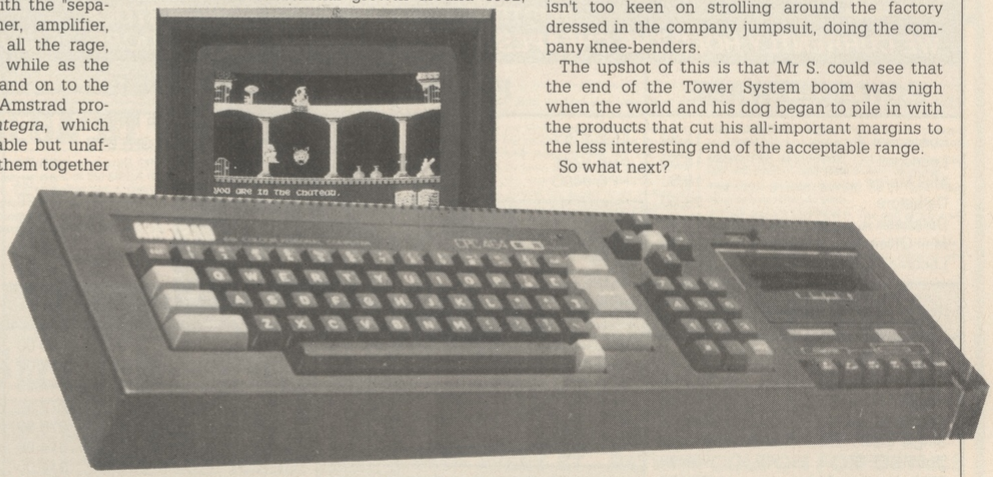
Such an approach to business has gradually been made extinct by tightening consumer laws and, more crucially, the public's attitude towards cheap and cheerful is waning, as the yuppie economy emphasises the "real" thing. The main retailers have also obliged their suppliers to tighten up considerably, as the costs of dealing with a returned product from a customer are absolutely vast compared to the margins being made in the sharp end of brown goods retailing.

Tower power

The market switch from separates to the Tower system was started, as usual, in Japan, where the boxes connected with plates of spaghetti approach (remember the John Cleese ads?) had serious repercussions for the shoebox living style of the average Japanese family. Sugar spotted this on one of his regular spying missions to the Far East, and set about applying the principle.

However, rather than simply tucking co-ordinated separates together in a very tidy stacked audio approach, Amstrad slapped the whole lot together in a single unit, made it look as if it were a set of perfectly aligned separates.

The cost advantage was dramatic: a single power unit, and a single chassis carrying all the electronics. The move coincided with increased automation in the assembly plants, and so a £199 "tower" system did the job of £500-600 worth of separates. This was the product that provided Amstrad with substantial growth around 1982, and inspired the Shoeburyness assembly plant and woodworking factory: why ship over boxes of air when the chassis and loudspeakers could be bolted into locally-made boxes?



• Amstrad's first computer, the CPC. Sometimes the simplest ideas are the best...

The Shoebury plant was also a hedge against possible import restrictions that the possibility of a switch of government might have meant. Also, as Amstrad's remarkable success (relatively) in France has shown, it was a useful card to play in the EEC "where's it made?" game.

However, quality was not a strong sales feature of the Tower family. Frankly, most things made in the Shoebury plant could have benefited from the attention to manufacturing detail that Amstrad's far East partners like Orion and Funai brought to bear on the goods that they made for Amstrad under the Amstrad label. Staff from the Far East were indeed seconded from time to time. But as most British businesses have discovered over the years, it is not possible to expect a UK workforce to display the productivity and reliability of Japanese workforce without total Japanese control.

Sony and Nissan have plants in this country that purport to have proved that the UK workforce can be as good as any. But the management regime applied is definitely alien to British techniques and requires commitment and capital investment that would send the average UK industrialist and his bankers down the club for a few stiff pink gins to recover their composure.

And whilst Sugar is definitely as scornful of the pink gin brigade as the most ardent Trotskyite, he isn't too keen on strolling around the factory dressed in the company jumpsuit, doing the company knee-benders.

The upshot of this is that Mr S. could see that the end of the Tower System boom was nigh when the world and his dog began to pile in with the products that cut his all-important margins to the less interesting end of the acceptable range.

So what next?

The failings of the rivals

The CB boom was always rightly regarded with suspicion by Amstrad. By this time, it was the most practical UK company as a result of its observations of other markets, and was mindful of the stern advice from its Far Eastern suppliers.

However, as the CB boom loomed (and waned!) the personal computer market became suddenly interesting.

Amstrad noticed that here was a business where the price paid by the customer was about ☞

six to ten times the cost of the manufactured product. This implied two possibilities. The charitable option is that the people making the product enjoyed some amazing control over the complex issues of the intellectual property (like Apple managed). Alternatively, they were simply inefficient, needed huge margins to pay for the cost of returns and had a less than perfectly honed approach to consumer goods manufacturing.

Arnold Trick

Why Arnold? Well, in the secrecy of casting around to find collaborators with the project, Ambit was not empowered to mention Amstrad's name in order to prevent interest being excited (and it's questionable that it would have done in those days anyway!).

Around that time, there was a powerful rumour that the mighty GEC operation was toying with the micro market, and the chairman of GEC is one Sir Arnold Weinstock. In a flash of inspiration, the project was codenamed Arnold to give all the know-all guessers in the micro business a tickle that what we might be suggesting was a GEC project!

And some duly fell for it. Subsequently it was pointed out that Arnold is an anagram of Roland (Roland Perry, now Amstrad's Technical manager was project co-ordinator).

A quick look at Acorn, Oric, Camputers, Sinclair and Dragon confirmed that the latter view. Thus an operation that brought efficient consumer electronics manufacturing to the game would have a big edge. Next step, pick a product to use as a starting point.

The Commodore Vic 20 was at that time the epitome of getting it about right, and so the Amstrad approach was conceived. But bearing in mind the strengths of the Tower HiFi approach, Mr S. decided to lob in the monitor and cassette recorder with a single power supply. And so he could tout a complete design that could deliver far more than the competition who did not have the necessary connections with the traditional consumer electronics trade.

Monitor and box were duly tooled up (to a standard that spawned the now famous "pregnant calculator" jibe aimed by Sugar at the hapless Sinclair Spectrum).

Key problems

Meanwhile, Sinclair managed to ruin the QL with a stylised presentation that was beginning to wear thin even with the Sinclair faithful. What they wanted was a real keyboard, please. Amstrad in its relentlessly practical way, noticed that most of the reported troubles of the competition were due to keyboards and connection of power supply and cassette recorder.

Hang about chaps – what about the innards of this box? Well, that can't be difficult, let's get a bloke to knock one up. It's got to be 8 inches wide, by 22 long with fixing holes at....

Yes. Amstrad had misjudged this end of the project ever so slightly. When the board of the right dimensions appeared around April 1983 (and singularly failed to work) to give Amstrad and technical director Bob Watkins their due, they spotted fairly readily that the person notionally responsible was not capable of the task, and that alternatives should be sought with some urgency.

A bid to take on the task from a components distributor and electronics design house, Ambit International, led to the formation of the new famous Arnold project team, resulting in the CPC464.

Ambit had no direct experience of micro computers, although it had spent a lot of time trying to hawk components to the likes of Acorn and Sinclair, and had identified that in any case this was the business of the blind. But Roland Perry, then of Ambit, knew plenty of men who had experience of micros at a more serious level. Moreover, he could see a constructive role emerging as broker between the down to earth approach of Amstrad, and the esoteric approach to the "posher" end of the office micro business.

In particular, he knew a group of skilled people who had recently left office technology firm, Data Recall – then famed for the Diamond word processing system. These people were Locomotive software and MEJ Electronics: respectively the software and hardware brains behind all of Amstrad's better computer offerings ever since.

The ill-fated microcomputer design was based on 6502 technology ("cause that's wot's in the Vic 20, innit?") and 'parts had ever been ordered against a shopping list.

However, time was marching on, and it was August 1983. A brief tour of other potential talent revealed that the choice of Locomotive and MEJ was likely to produce the results within the time and (outrageously modest) budget.

So a switchover to Z80 was duly made having exhausted the 6502 option, and prototypes appeared in November, after starting the project in August. This was no mean feat, especially since the prototype hardware and software largely worked. The first progress session was quite memorable, as about the only thing that was working available was an ability to drive the cursor around the screen using the arrow keys.

But even this was a whole lot more impressive than anything that had gone before, and so Mr S. and his people gave nodding approval, and heaved a sign of relief that maybe their plastic mouldings were going to be of some use after all.

"Arnold" received the go ahead to be completed with a view to a launch in April 1984. The rest of the world, of course, would know it as the CPC...●

NEXT WEEK:

The great leap forward

Having launched the CPC amidst the disarray of his rivals, Alan Sugar had a bigger, better battle to fight. A certain notion of an all-in-one word processing machine was looming...

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Sprite Master

Atari ST ● £24.95 ● Soft Bits
(5 Langley Street, London, WC2H 9JA, Tel: 01-4836 2533)

Another sprite designer. What's so innovative about this one that could possibly warrant its release? Well, it's cheap...

For the uninitiated, a sprite designer is a tool necessary for creating animated images which don't interact with background graphics. Basically these images pass over graphics without destroying what's underneath. Typically, sprites make a game; without spinning, throbbing, objects you have no game. Of course, sprites aren't just found in games. For instance, the GEM pointer is a sprite – albeit an uninteresting black and white affair.

User interface

Pretty, very pretty. Simply click on one of eight neatly-designed icons and up pops a window housing various options or an editing screen. The icons have obvious designs which means the manual is virtually redundant.



Throughout the program this user-friendly system has been adopted – other software houses take note. The program interface is generally responsive, which unfortunately can't be said for all editing functions.

Range of features

Drawing facilities include pixel, line, box and circle drawing. The shape is placed on screen in the currently active colour. *Sprite Master* only works in low resolution (what's wrong with low and high res?) which means you can choose from a palette of 512 and have 16 of those colours on screen at once.

Options also exist for filling an area with a certain colour, clearing the current sprite frame, copying a sprite from one frame to another, merging one frame with another, flipping a frame either horizontally or vertically, scrolling a sprite by pixel increments in any direction, rotating clockwise or anti-clockwise in degree increments (sadly it's very slooooow), squashing or stretching, outlining (which is very interesting: it lets you outline a sprite with a colour of your choice) and undoing.



• A mundane sprite pinched from a mundane game from Mundane Software

You can load screens created with the more popular art packages – *Degas Elite*, *Neochrome*, *Art Studio* and *Paintworks* – and then either use the picture as a background for your sprites or grab portions of the screen to use as sprites.

Documentation

The manual contains enough information for you to get by, but it's nothing special. It's printed using a dot-matrix printer and contains a few illustrations. While it doesn't rank with the elite, it certainly isn't as tacky as many manuals.

Verdict

Crammed on the disk are two utilities: PICMASTER and LISTMASTER. The former lets you load several picture files which you can squash and then cut and paste between any screen. The idea being that you use the resulting images as sprites. LISTMASTER converts *Sprite Master* data into an ASCII format which can be merged into programs written in C, Assembler or any of the popular BASICs.

Bags of options for creating and manipulating sprites, good provision for including sprite data into your own programs and unquestionable value for money. Pity about the terrible rotate option.

✪✪✪✪

Richard Monteiro

HIGHLIGHTS
- Cheap
- Sprites can be anything from 16 pixels square to 144 by 84 pixels
- Most popular programming languages supported
- Excellent range of editing facilities

DRAWBACKS
- Only works in low resolution
- Rotate option is painfully slow

The opposition

Sprite Factory, £49.95, CRL (01-985 2391) – contains all the features you'll need for editing sprites. Only works in low resolution and sprites can only be 32 pixels square. Has several utility programs for creating game maps, testing sprite movement under joystick control and numerous demo routines.

STOS, £29.95, Mandarin (0625 878888) – a competent BASIC with many utilities including a sprite designer. Works in colour and mono, copes with various sprites sizes and comes with facility for nicking sprite data from other programs.

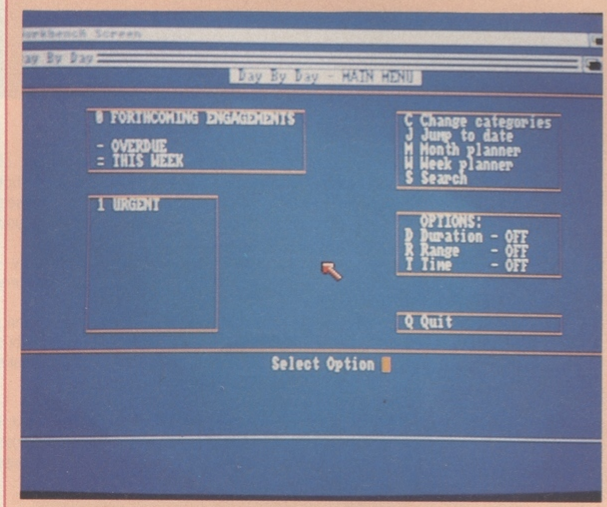
Day by Day

Amiga ● £29.95 ● Digita International
Kelsey House, Barns Road, Budleigh Salterton, Devon EX9 6HJ. Tel: (0395) 45059. Also on ST, PC

Day by Day is a computer version of the main reason for buying a Filofax™ – apart from the status symbol (*What status symbol? – ed*) – that of organising your day to day life. Digita is pitching the package to suit all categories of user – such as business, educationalists and home users. But just how much do these users need a computer organiser?

User Interface

User-friendly is not the operative phrase in *DBD* – the wide range of easy-to-access Amiga WIMP options are not used. Commands are implemented by single keystrokes (or mouse clicks) and the results are displayed on a rather clumsily implemented display screen. The arrangements for editing text are primitive to say the least. Finally, there's not even the option to resize the window, although *DBD* did seem to multi-task (but we can't be definite about it!).



• Day by Day: Curiously avoiding WIMPs

Features

DBD combines a calendar, diary and planner. You can create your own category of entry such as birthdays, bills and letters to be written which can be flagged by either "overdue", "urgent" or "in the forthcoming week" reminder messages about what you've got planned. You can also take a quick glance at a monthly/weekly summary of the events planned and everything can be dumped out to printer (for those who don't like the idea of a paperless office).

Documentation

Day by Day comes with a simple multi-format 18 page manual complete with contents, appendices for each machine's differences and an index. It takes the user through each step of using *DBD* in a clear and concise way, and is suitable for both novice and advanced users.

Verdict

The basic flaw in this program is the fact of its very existence – why bother computerising something that works perfectly well with pen and paper (not forgetting the leather-bound case to carry them around in)? Opponents of this statement possibly have two lines of counter-argument. Firstly, *DBD* contains a search facility which is useful in tracking down that almost forgotten entry. Lastly, *DBD*'s important date reminders can help the absent-minded. But then again if you're that forgetful (and too lazy to look through your diary), you'll probably forget where you put the *DBD* disk in the first place.

✪

Rik Haynes

HIGHLIGHTS
- Easy to read manual.
- Free 60 day telephone and written support.

DRAWBACKS
- Totally useless idea in the first place – apart from the search option.
- Doesn't take advantage of the Amiga's WIMP environment.
- Primitive facilities for editing text.

Welcome to *New Computer Express's* games section, the liveliest, most up-to-the-minute reviews for miles. Here's what we offer that other magazines don't. We:

- make sure more than one person sees each game, so that the verdict can be relied on.
- avoid the shoddy practice of basing 'reviews' on unfinished games.
- break up reviews into easily-digested sections relating to scenario, gameplay, graphics etc. – no more hunting to find out what you want to know.
- take version differences seriously. You'll always know what machine the game's being reviewed on, but we'll give you information about other versions too.
- use a simple, no-holds barred, no-fuss star rating system, where only the very best games get the coveted five-star rating.
- give games of particular significance their own box, together with a flash to say what's different about them.

VICTORY ROAD

IMAGINE

CPC • £8.95cs, £14.95dk
Also on Spec, C64
Out soon on ST, Amiga, PC

***Victory Road* is another in the long line of SNK's *Ikari Warrior*-type vertically scrolling shoot'em-up's.**

● GAMEPLAY

It's the usual story in this one – 'if it moves shoot it' and 'if it doesn't move still shoot it' – as you wade through some horrifying aliens in an attempt to clean up the place.



• It looks like you're in trouble with old face-ache here



• Attractive graphics, but nothing new

Along the way you'll find collectable icons that yield extra firepower or score bonuses – and also various trapdoors which transport you into a bonus screen, placing you in a head-to-head confrontation with a frenzied face.

● GRAPHICS AND SOUND

Graphics are up to the usual Imagine standard. Sprites are colourful – although some are rather small and blocky – and the backgrounds are simple but effective. The only bad mark is the scrolling, which is a little jerky.

Audio compromises competent spot sound-effects for gunfire, explosions, etc.

● OTHER VERSIONS

No details on the other versions are currently available.

● EXPRESS VERDICT

Victory Road provides an enjoyable blast with a good selection of enemies and scenery to give you a hard time. As with other games of this type, it really takes off when played in simultaneous two-player mode. Well worth trying out.

✪ ✪ ✪

Rik Haynes

RING WARS

CASCADE

Spectrum • £8.95cs
Out next year on ST, Amiga



• Competent, but hardly another Elite

Cascade gives you another chance to save the solar system using your humble Spectrum and a copy of its latest release *Ring Wars*.

● GAMEPLAY

A long time ago, in a galaxy far, far away, an ancient and forgotten civilisation known only as Ring Worlds started a (star?) trek across the galaxy, eating up any uninhabited planet in their path. That is, until a glitch in their system occurred, making them hungry for conquest. Now they're in our solar system and their just waiting to get their teeth into our beloved Earth.

Here's where you come in. Flying your faithful old spacecraft around every planet and moon, you'll blast away any Ring Worlders that are foolish enough to chance their luck in an attempt to find the Ring World and blow it away, before your own escape becomes all but a dream.

In play, your craft is represented on-screen by a control panel and vector graphic display window. Punching up Navigation will send you into a representation of the solar system, with you selecting which planet you want to visit. You then flip to hyperspace – shooting any alien craft that come your way during the space flight there.

Once there, the aim is to find either a Moonbase or a Ring World Drone – the former is a resupply depot, the latter is a defence mechanism which has to be destroyed.

Each Moonbase gives you a different selection of services such as refuelling your ship, recharging your lasers or repairing your fuel system – so it's a good idea to hunt around for the base that best suits your needs.

When you've destroyed all the Ring World Drones, you be able to have a crack at the Ring World itself, hunting high and low for its reactor in a bid to do a bit of damage with your nuclear bomb...

● GRAPHICS AND SOUND

The vector graphics employed throughout the game are simple, but fast. They break no new grounds in 3D graphic design but perform their tasks admirably.

Audio on the other hand is atrocious, with your laser spot-effects sounding like an attack of flatulence.

● OTHER VERSIONS

Don't expect to see the ST and Amiga versions of *Ring Wars* until at least February – but then again it's taken well over a year for it to be released on the Spectrum.

● EXPRESS VERDICT

Ring Worlds is not terrible, but it is ever-so-slightly boring. You just don't get any neurone-shattering excitement as you travel around the 234th moon searching for the right base to resupply you.

Still, there's plenty there for all you explorers, but don't expect it to take over your life (okay that's enough winging about last week's selection of the all-time greatest games – Ed).

✪ ✪ ✪

Rik Haynes

STAR WARS

DOMARK

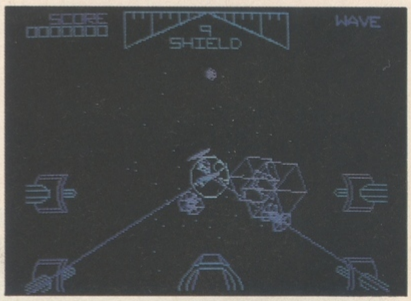
PC • £19.95dk
Also out on Spec, C64, CPC, ST, Amiga

Domark finally gives us a chance to play Atarisoft's *Star Wars* arcade game on the PC. After its indifferent reception on the other computer formats, does PC *Star Wars* strike back?

● VERSION UPDATE

Star Wars is a vector graphic shoot'em-up with you controlling Luke Skywalker's X-Wing fighter and starting off in deep space, blowing away any Tie Fighters that zoom your way (or losing one of your nine shields if you can't hack it).

Once you've taken out enough Imperial scumbags, you'll fly straight towards the Deathstar itself, and travel down its trench while avoiding ground flak and, in later levels, barriers. Live long enough and you'll reach the reactor shaft and hopefully blow it out of the sky – or start down the trench again if you fail.



• Even The Force wouldn't help this version of Star Wars

Later levels introduce a middle section, consisting of short and tall laser-spitting towers which have to be shot or flown around – but speeded-up action and increased Imperial firepower are the only other differences as you progress through the game.

The vector graphics are relatively fast but very jerky – and quite often merge together, making the display very confusing.

Audio is – as you would expect – almost nonexistent, with only a few spot sound-effects. No more Ben Obi's mundane delivery of "Use the force Luke" as you make your way down the Deathstar trench.

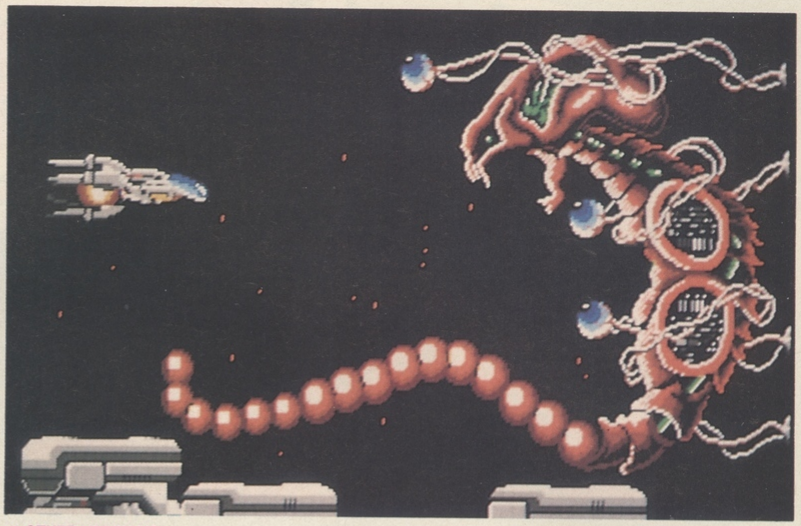
● EXPRESS VERDICT

Star Wars was a great arcade game 5 years ago, but it cuts no ice in late 1988. Repetitive gameplay, sluggish control response and average vector graphics contribute to a rather forgettable release on the PC.

✪ ✪

Rik Haynes

R-TYPE



ELECTRIC DREAMS

ST • £24.99dk
Also on Spectrum
Out soon on C64, CPC

Mediagenic now gives you the chance to play the home micro version of the classic horizontal-scrolling shoot-em-up coin-op, *R-Type*, probably one of the most playable, addictive and audio-visually stunning arcade games of the genre thus far.

● GAMEPLAY

The story so far... The evil Bydo Empire is taking the known universe (and beyond) to the cleaners, and it's up to you in your super-sophisticated mean machine – the R-9 fighter – to wipe these imperial jokers off the map.

That's enough scenario – let's get down to some serious destruction. In play, you control a fighter capable of not only normal firepower, but also an energy bolt of awesome devastation, which is activated by holding down the fire button – the longer you leave it pressed, the greater its strength.

CLASSY CONVERSION!

After shooting an enemy craft you'll get the chance to collect jewels which yield such desirable items as reflecting lasers, homing missiles or speedups. As an added bonus, the first jewel collected will give you a special weapon – The Force – which is a general dogsbody useful as a shield, ram or extra laser platform.

It's lucky you've got these weapons, because the oppositions tough – ranging from missile-firing mechs (droids) to weird and horrific aliens resembling something too ugly to appear in a sci-fi film.

Visuals are very impressive. The sprites are well defined and beautifully coloured – as are the backgrounds – and are very reminiscent of the coin-op. This is tarnished, however, by the jerky scrolling – but then given the size of the screen area this is hardly surprising.

Audio is the only truly awful aspect of the game, comprising a tremendously chronic title soundtrack with barely adequate in-game sound-effects. In fact we've heard better from a Stock, Aitken and Waterman record – well almost!

● OTHER VERSIONS

The Spectrum version really gets those reflexes going thanks to an equally good conversion. The C64 and CPC versions are on their way – let's hope they're just as good. But where's Amiga *R-Type*? Amiga owners everywhere, immediately write in to Mediagenic and demand a version for your machine.

● EXPRESS VERDICT

With such a fantastic coin-op to convert, it's surprising Mediagenic didn't sing the praises of ST *R-Type* a little louder – we didn't see a copy until we passed a software shop this week.

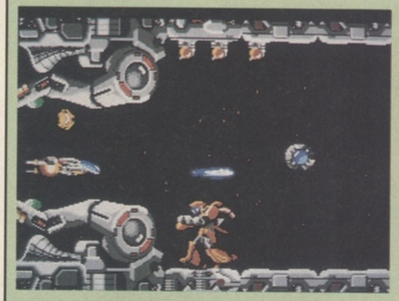
This may be due to the fact that the conversion does have a few flaws, namely taking an annoyingly long time to load each level – and worst of all, a really annoying pause between lives.

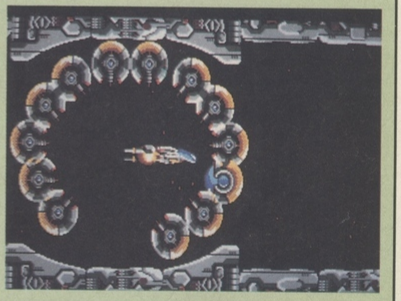
Despite these faults, ST *R-Type* manages to replicate its coin-op parent quite closely, with its immensely playable gameplay shining through as the best feature of the conversion.

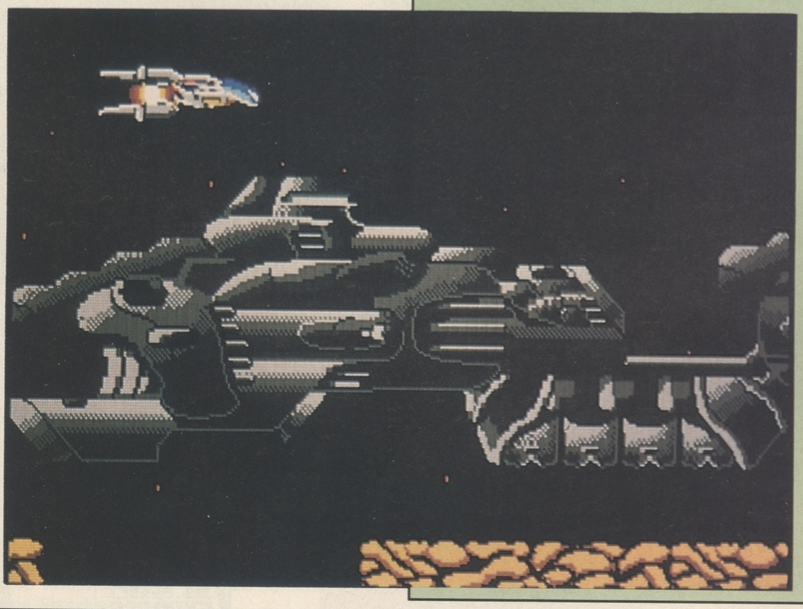
✪ ✪ ✪ ✪

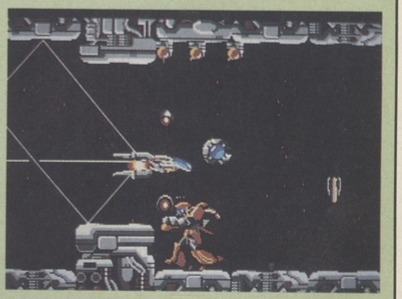
Rik Haynes

• Just catch those arcade quality visuals...

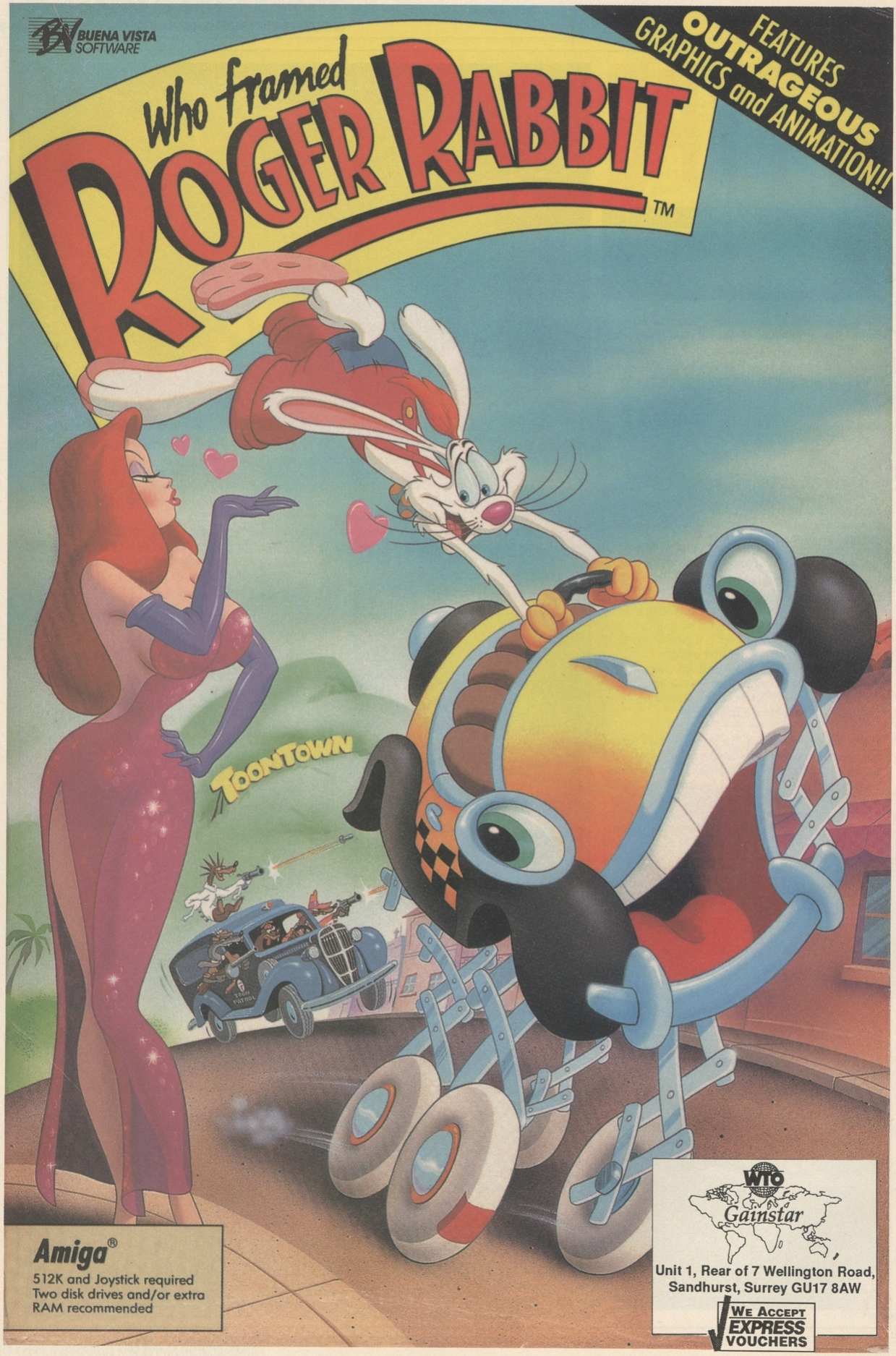











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TURBO-TRAX

MICRODEAL

Amiga • £24.95dk
No other versions planned

Microdeal's newest Amiga offering is *Turbo-Trax*, a racing game that should suit all those closet fans of the toy. But will it attract any new driving fanatics?

● GAMEPLAY

The game follows the principle of the *Scalextrix* toy: different pieces of track are spliced together making a race course which you and a computer-controlled opponent (or second player) race over in one of a selection of eight cars.

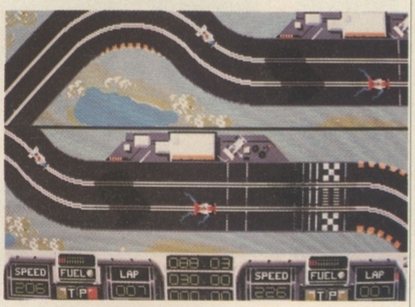
You start the game by either designing your own course or playing on one of the five default circuits. There's also the facility to save your masterpieces in auto-track design for later use.

Once that's over, you actually get down to play as you guide your car around the circuit making sure you stay dead on the centre power supply (if you don't, you'll get a spark and a time delay). You're just trying to get round in the fastest possible time – and that's all there is to it.

● GRAPHICS AND SOUND

The graphics consist of small, scarcely-animated sprites – but at least the scrolling's passable.

Audio is almost non-existent except for a few unoriginal and unexciting spot sound effects and a terrible rendition of the Sunday Grand Prix TV show soundtrack on the title page.



• The real Scalextrix is a million times better

● OTHER VERSIONS

No other versions are planned at the moment – we wonder why?

● EXPRESS VERDICT

Nice idea, shame about the game. Although it may appeal to hardened fans of the toy, it's no-where near as much fun to play with...

✪

Rik Haynes

MARIA WHITTAKER'S CHRISTMAS BOX

ANCO

ST • £14.95dk
Due out soon on Spec, C64, CPC, PC, MSX

Latest in the long (interminable?) line of Anco strip-em-ups is this Yuletide offering featuring the ample virtues of page 3 girl (and Barbarian prop) Maria Whittaker.



• For shame – you thought we were going to print a screenshot

● GAMEPLAY

Gameplay...yes. As usual you play against an indifferent computer poker opponent in an attempt to halt busty Maria's frenzied rush to divest herself of all her clothing. To be fair, there is a choice of opponent strength at the start of play, so you can boost the game's staying power by selecting the tougher option. (Caution: the two options are labelled 'hard' and 'easy', and they're the wrong way round. It must be a joke.)

● GRAPHICS AND SOUND

The graphics are less than inspiring, consisting of rather clumsily-retouched digitised renditions of Maria variously reclining, lounging, pouting, swinging etc, while at the bottom of the screen is a green (baize?) playing area where your cards are dealt slowly and silently.

Yes, that's right – no sound. We recall the legendary Amiga *Strip Poker 2+*, which at least had the pleasant sound of riffling playing cards to accompany all the heavy breathing.

● OTHER VERSIONS

Also on the Amiga, the 8-bit versions are the ones to look forward to. Strip Poker with 8-bit graphics – can you imagine it?

● EXPRESS VERDICT

Disregarding the question of taste (another can of worms altogether), *Maria Whittaker's Christmas Box* is not a good game. Flesh-fetishists will be disappointed to learn that coy Maria refuses to divest herself of all, unlike the damsels in Anco's earlier efforts, while the sub-elementary gameplay is unaltered. And once you've won that final hand you're returned to the menu screen for another go – rather optimistic on Anco's part, seeing that you'll probably never play the game again.

✪

Rod Lawton

FREEDOM

COKTEL VISION

ST • £19.95dk
Due out on Amiga, CPC, PC

French company Coktel's first release on these shores features some astounding graphics and an original scenario being based on an 18th century sugar colony! You are the leader of a bunch of rebellious slaves out to make an heroic escape. Do Coktel really have the vision to carry off a strategic role play game that has political struggle as its central theme ?

ORIGINAL!



• Looking out for slaves to sweeten up in the sugar colony



• But you'll need some combat skills to pay the price of freedom

● GAMEPLAY

First off you choose between defiant, rebellious and fanatical game modes and opt for a set of attributes to compose your role as leader – your constitution, charisma, and abilities to start fires and climb. From then on you set about rallying as many slaves as you can – and as *Freedom* is subtitled *Rebels in the Darkness*, most of this involves wandering around their huts at night.

The colony has 204 slaves split into 14 huts of 10 field slaves and 6 sets of 10 craftsmen. You have to build up your confidence points, and thus your persuasiveness, by continually making the right decisions and successfully defeating adversaries. It's also necessary to build up allies – here there's a choice between the craftsmen, witch doctor, medicine man, mermaid(!?), monk and animal-doctor.

You proceed with a rebellion by engaging in arson, climbing, picking locks, fighting, rendering characters harmless and rallying more slaves. You're up against a master-owner, a master-prosecutor, 3 types of colony manger, stewards and foremen. And what seems like hundreds of dogs which should be the first on your hit-list.

You can use the path-finding menu to find your enemies, call up the advice of a sorcerer who's conveniently in the neighbourhood and check up on your men, the victims and the damage you've inflicted. Successful rebellion needs to be conducted before dawn and is measured by the amount of complete carnage you're responsible for. There's no two ways about it – *Freedom* relies on armed struggle.

● GRAPHICS AND SOUND

Freedom is visually very strong, with extremely colourful locations looking as though they could grace an advert for the Caribbean. Whilst most of the action takes place at night, this only serves to add to the sense of atmosphere on hand. Combat sequences are especially well drawn, with animated sprites engaged in martial arts fisticuffs against very pretty backdrops.

The game is essentially mouse driven and relies on detailed drop-down windows and menu bars. Sound is competent too – the drum-beat backing theme providing a sense of the impending tension.

● EXPRESS VERDICT

Combining the structure of a wargame with strategic and tactical phases, with aspects of role-play such as the creation of characters and manipulation of their skills, *Freedom* is certainly different in terms of its subject matter. It'll probably sell better on the continent than here, though, since the British don't even admit to having had an empire based on slavery let alone the nerve to design a game around it. Worth checking out if you feel like some radical role-play.

✪✪✪✪

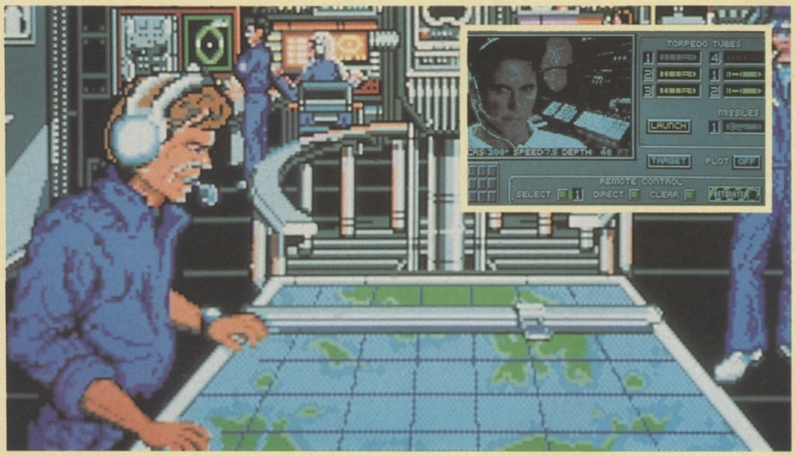
Andy Storer

Future Perfect Pixels

This week's previews certainly look a treat. Andy Storer ventures from the dungeons of Middle Earth to the oceans of outer space – and lives to tell the tale.

688 ATTACK SUB ELECTRONIC ARTS

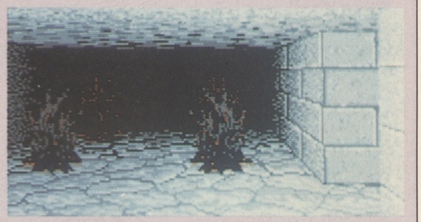
As you can see, *688* features stunning 3-D graphics and digitised pictures in a simulation where you're up against a multitude of submerged, surface and airborne targets around the globe as you command either a US Los Angeles or Soviet Alfa sub. Nice to see you can choose your politics! You can also play the ten different scenarios against another player down a modem so you could get truly global if you wished. There are also digitised sounds of sonar and whale songs to compound the tension. It'll support up to 256 colour MCGA cards too – for all you hi-spec PC owners out there.



• After sizing up the action below, you turn to your crew for assistance

CHAOS STRIKES BACK IMAGEWORKS

Back in March, *Dungeon Master*'s release took the ST world by storm and prompted Mirrorsoft to claim it sold to one in five ST owners – based on sales of over 30,000. Although Amiga owners are next in the queue for the descent to the depths, Imageworks has released *Chaos* to present ST owners with a further five levels to explore. In addition, the package features a character portrait editor enabling the player to change the appearance of their party. Planned for release in autumn '89 is *Dungeon Master II* – a sequel set, curiously, in outer space.



• Deeper and deeper into the ST's dungeon

BLASTEROIDS IMAGEWORKS

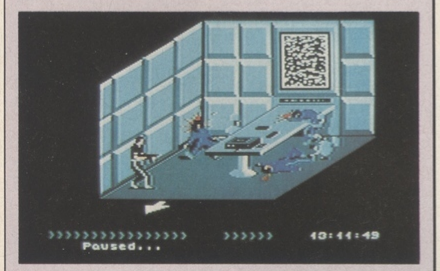
What looks as though it could be a very good conversion of the arcade original is set for release on every format this side of Pluto early next year. Possibly the most interesting aspect of the cloning is the fact that the graphics have been directly ported over from the cards of the coin-op machine itself. How these will copy to the Speccy must be open to debate but then stranger feats have been successful – check out *Afterburner* for instance.



• With a title like Blasteroids you must have a good idea of the task awaiting you

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• A spot of sanitation off Saturn as you sort out a few mutants with your C64

WAR IN MIDDLE EARTH MELBOURNE HOUSE

Hot off the press this week is an Amiga screenshots of a strategic role playing war game based on Tolkien's trilogy *Lord Of the Rings*.

The game looks and sounds a treat (you'd better be pretty fond of hobbits though). Coming on two disks, all controls can be activated by mouse using icons and windows but certain hotkeys are available to make life even easier.

The game is composed of three levels – Full Map, Campaign and Animation – which correspond to magnifications of the war, starting at overview and zooming down to individual characters' actions. You can flick between each at will and enjoy the variety of high-quality digitised pictures and music accompanying each location. Of special note is the animation level where you can watch fully-animated figures moving against digitised backgrounds.



• The map screen in War in Middle Earth



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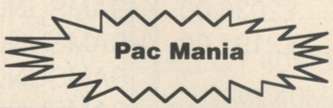
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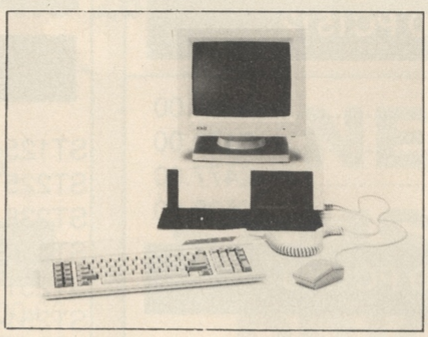
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Two by two

Baffled by binary? Don't understand 16-bit talk? Peter Worlock delves into the mind of a micro...

For many of us, binary arithmetic was a yawn in school maths lessons. It seemed irrelevant to the real world, like doing sums in Roman numerals, when everybody and everything worked in decimal. That appears to be even more true today, when our monetary system has long been decimalised, and we are slowly and painfully being dragged into metric measurement.

Everywhere, decimal is king. Everywhere, that is, except in computers.

Most beginners must wonder why the same numbers, and such funny numbers, crop up time and again in computers: 64 or 512 kilobyte memories, 1,024 bytes to the kilobyte, processors with 8 or 16 bits, computers with 8 or 16 or 32 or 256 colours. If decimal was truly king, surely we'd have 10-bit processors, 500K memories, 1,000K disk drives?

The sad fact is that, behind all their apparent power and sophistication, computers can only count to two. In the computer world, "binary rules, 2K".

This rule derives from the very nature of computers, which are *digital* devices – everything is reduced to two states: off or on, high voltage or low voltage, 0 or 1. Now, that might look inconvenient, but it actually makes life a lot simpler if you're designing computers.

For example, a binary system makes for very efficient memory: you just stick some voltage in there and as long as it remains charged, it's on. When the voltage empties, it's off. If you were designing a decimal memory system you'd have to have ten levels of voltage, and if a little bit of the charge trickled away the value in the memory would change. So a decimal system would be far more complex and less reliable.

Counting higher

With a single digit, a binary system can count to two: if the bit (a contraction of binary digit) is off, it means zero, and if it's on it means one.

But counting to two is not particularly useful, so computers use strings of binary values to denote higher numbers, in the same way that we use strings of decimal values. Reading from right to left, the number 1,500 means no single units, no tens of units, five hundreds of units, and one thousands of units.

Similarly, computers build up higher numbers in strings of binary digits, or bits:

No.	0	1	2	3	4	5	6	7
Binary	0	1	10	11	100	101	110	111

It can be seen that the addition of each extra bit allows us to describe a number up to the next additional power of 2. So that two digits allows us to count up to 2 to the power of 2, or 4. Three digits is 2 to the power of 3, or 8, and so on.

Somewhere along the line, computer designers agreed that a group of eight bits would be the standard "chunk", and this chunk is called a byte. A collection of eight bits gives us 2 to the power of 7 numbers, which is 256 values ranging from 0 to 255. If you've ever dabbled in Basic programming, you'll know that you can't POKE a value higher than 255 into a memory location, and the byte limitation is why.

Already, certain aspects of the binary system explain certain things about computers. For example, why the next step up from a simple black and white display is not three colours but four. The answer is that to define three colours takes two bits, but two bits also gives you four values so you might as well use the fourth colour.

Similarly, the next step up from eight colours is 16, because it takes the same number of bits to describe 16 colours as it does nine, or ten. If you limit the colour range to anything less than 16, you're simply wasting the computer's capacity.

If that isn't clear, the following table shows how you can get between 9 and 16 values out of just four bits:

No.	8	9	10	11	12	13	14	15
Binary	1000	1001	1010	1011	1100	1101	1110	1111

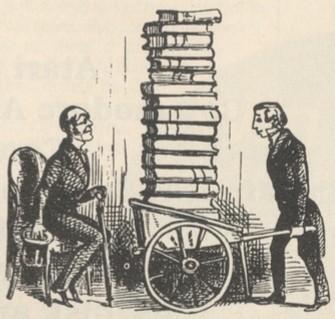
And since computers always count from zero, the number 15 gives you the 16th value.

The size of the byte also has other implications for the computer. For example, since the byte gives us 256 possible values, you can have up to 256 different characters in a computer's character set.

Memory matters

Computer memory size is also governed by the binary system. By now you'll recognise the pattern in the development of microcomputers: the old Apple IIs and Commodore Pets had 8K, the Sinclair Spectrum had 16K, the BBC Micro had 32K, the C64 had 64K, the QL had 128K. STs and Amiga's jump to 512K and 1,024K.

These numbers derive from the size of the computer's address space. If you give a computer an 8-bit address space, you can only identify 256 bytes which obviously isn't very useful. However, if you make the address space two bytes wide you don't double the number of locations, you increase it from 2 to the power of 8 to 2 to the power of 16, or 65,536 locations, which is 64K.



• Carrying data 16 bits at a time

All of the early computers – the Spectrum, the C64, the Amstrad CPC – use 16-bit address spaces giving them a theoretical maximum memory of 64K. Some use less than this because they were designed at a time when memory was expensive. More modern machines, like the Commodore 128 and Amstrad PCW have more – 128K, 256K or even 512K, but they do this by cheating, using two or more different chunks of 64K. This is a handy fudge, but it means the processor can never see both chunks at the same time.

The new generation of 16-bit computers, like the ST and Amiga, use much bigger address spaces, allowing them to address 512K, 1,024K all the way up to 8 megabytes without fudging. This is one reason (although admittedly a minor one) why a 512K ST is faster and more flexible than a 512K PCW.

Processor power

The binary system also lies at the root of one of the more confusing arguments in computing: the real differences between 8-bit and 16-bit computers, and whether a machine like the ST is really a 16-bit or a 32-bit computer.

The power of a computer can be calculated as the result of two factors: the size of the processor, and the size of the data bus. (The data bus is simply the collection of wires along which information travels between the processor and memory. A 16-bit data bus can carry data 16 bits at a time.)

With older computers, the argument was very simple. Machines like the C64 and the Spectrum have 8-bit processors – they can hold and manipulate numbers 8-bits wide. Similarly, their data buses are 8-bits wide, since there'd be no point in fetching and storing 16-bits worth of data when the processor would have to ignore half of it.

So older machines are very definitely 8-bit computers.

The first problematic system was the IBM PC. It uses the Intel 8088 processor which is a 16-bit processor: it can manipulate numbers twice as wide – two bytes wide – as an 8-bit processor. However, it had only an 8-bit data bus, the same as earlier computers, which means that it takes two attempts to fetch enough data from memory to fill the processor.

The PC can accurately be described as a 16/8-bit computer.

PC AT-compatibles use the 8088's bigger brother, the 80286 which is a 16/16-bit processor.

Next came the Atari ST, Commodore Amiga, and Apple Macintosh, all using Motorola's 68000 processor. The 68000 is a 32-bit processor, so it can handle four bytes at a time, but it has a 16-bit data bus. Again, it takes two attempts to fill the processor. Thus machines using the 68000 are 32/16-bit machines. Just to confuse the picture, when Sinclair built the QL, he opted for Motorola's cheaper processor, the 68008. This is a 32-bit processor but it has a tiny 8-bit data bus. The QL could be called a 32/8-bit machine.

The very latest machines are those using Intel's 80386 and Motorola's 68020 which are 32-bit processors with full 32-bit data buses – true 32/32-bit machines.

So what does all this mean? How much more powerful is an Amiga than a Spectrum? Is an ST more powerful than a PC-AT?

Ultimately, it all means nothing much at all. There are always other factors – memory size, disk access speed, screen display, available software, and how well that software exploits the machine – that matter more to people who use computers. ●

Technobabble

A weekly assault on computer jargon

ASCII

● ASCII used to stand for the American Standard Code for Information Interchange but today it just means a way of passing information around.

● Pronounced "askey", the code allocates numbers to 128 different characters – all of the alphanumeric characters, and around 30 special codes that should do standard things to computers, printers and other devices. Because the code is standard, you should be able to tell any computer to print the character 65 and get an "A", and similarly any printer should print an "A".

● The exceptions to this are early Commodore computers, including the C64, which resolutely stuck to something that was almost but not quite ASCII. Since it started on the PET, the Commodore codes became known as PETSCII, pronounced "pesky" because they're a bloody nuisance.

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HELP! Printer problem

I am in the 60+ age group and need some help. I have a Spectrum +3 and an Amstrad DMP 2000 printer and want to LPRINT UDGs (user-defined graphics). I have a UDG designer program and they print OK on screen, and using the COPY mode I can print them out without trouble.

Can you please explain how to LPRINT CHR$(144) etc, when my UDGs are in memory. I hope you can help (it's a great new mag).

Bill Fowles, Northwich, Cheshire

• Whether or not you can circumvent this problem depends on a single feature of the printer. But first, the reason why you have the problem in the first place.

All printers use a (more or less) standard ASCII character set, but the ASCII code only defines the first 128 characters. The codes from 129 to 255 are up for grabs. Some printers define them as a full alternative set (italics, or the IBM graphics set, for example).

When your computer sends a character to the printer, what it actually sends is the code. It neither knows nor cares what the character looks like. Similarly, when the printer receives the command to print, say, character 65, it prints the character with that code number. It's a matter of blind faith that the computer and printer are using the same code number to describe the same character.

Obviously, user-defined graphics don't fall into this scheme. The computer knows what character 144 looks like because it has the definition, but your printer hasn't the foggiest.



• Printers – understanding those characters

So the solution depends on whether your printer can accept user-defined characters. I don't whether the Amstrad DMPs qualify, but it is a common feature especially among Epson-compatible printers. Check your manual to see whether it supports user-defined characters or downloaded graphics.

If it does, you should find a full explanation of how to send the character definitions to the printer. It will be very similar to the way in which you create UDGs on the computer, using a series of data statements to define the on and off bits of the character.

Once the graphics have been sent to the printer, you can then print them in the same way as the normal character set.

TIP

Ribbon revival

I find that I use up printer ribbons fairly quickly but have found a method which doubles the life of a ribbon.

The solution is to take the ribbon off the printer and spray it with WD40, which releases the unused ink in the ribbon which has dried up. Make sure that you allow the ribbon to dry before putting it back onto the printer.

This method will also work with colour printer ribbons and does not cause the ink to run together – my son has the LC10 colour printer and tried this method with excellent results.

Ian Forster, Carlisle

HELP!

Memory shortage

I have a Commodore 64 with 1541 disk drive and MPS801 printer, a set-up I find satisfactory for most tasks. Is it possible to buy an expansion board for the computer to increase its memory from 64K to 128K or 256K, and if so where can I buy one and what is the price?

I find that when using the *EasyScript* package, I sometimes run out space before I run out of what I want to write.

Richard Moloney, Finaghy, Belfast

• Commodore produces a 256K RAM expansion pack called the 1764 which comes with its own power supply. However, it may not solve your problem with *EasyScript*.

The 1764 can only be used by software that knows it exists, and that obviously isn't true of *EasyScript* which is a very old program. However, it can be used as a large, very fast disk drive.

Your specific problems with *EasyScript* have two possible solutions. One is to break your work up into smaller sections and store them on disk as you work. The second is to buy another word processor which doesn't hold all of a document in memory but loads and saves text to disk as it is needed. This method means you have a document as large as the available disk space.

Either *Superscript* or *Vizawrite* are highly recommended, and you should be able to get either from your local Commodore dealer. The same goes for the 1764 RAM pack, but if you have trouble you can order it mail order from **FSSL, 10 High Street, Pershore, Worcs WR10 1BG, tel 0386-553153**.

TIP

Big bang!

Regarding the ST crackling when switching off/on – the solution we're told is to do it smartly. INCORRECT – I experienced this problem when I had an ST. After eight weeks (I had the crackle, but turned on and off smartly) it blew up! A massive spark came from the back.

I now own an Amiga 500, but I thought I'd warn any ST owners that the *real* solution is to get four door stoppers and raise your ST up about 2cm. This prevents overheating with the pack, which provokes the problem. From then on until I sold the machine there was no problem.

A.J. Reader, Maidstone

HELP!

Excess access

I've just bought an Atari 520STFM which is working A-OK bar a little problem with the disk drive. Most disks load and run fine, but certain commercial programs, while loading and running OK, will not switch off the drive busy light, which remains lit the entire time the game is being played. Even worse, some switch off the light but the drive keeps working.

What is wrong: the disk, the machine or both? I'm new to disks and very confused – please help.

Paul Godfrey, Newcastle upon Tyne

• If your software is working correctly, there's absolutely nothing to worry about.

When you're loading a program, the busy light comes on to tell you that the read/write head is in action. Once a program has loaded, the light goes out.

However, when a program itself is reading or writing to the disk, the light will stay on until the file has been closed because even though the drive itself may not be physically doing anything, the data file is constantly open for changes. Some games open a file for graphics or other information and only close the file at the end of a game session, so your busy light stays on throughout.

There are two possible explanations for the second circumstance, where the light stays off but the drive operates. First, disk drives are always "on". Even when the drive is idle, the motor is constantly spinning the disk; this is to make operations faster – the computer doesn't have to wait while the disk starts to spin and then comes up to speed.

Second, the busy light is turned on by the disk operating system as part of its normal duties. But some programmers, either for speed or because they think they can write better disk routines, bypass the operating system and access the disk directly. Usually they don't bother to turn the busy light on.

In any event, there's no cause for alarm. You'll soon come to know the different sounds your drive makes when its working or idling, and you'll recognise anything that is a genuine cause for concern.

TIP

Whistling PCs

When your monitor is displaying the A> prompt on the Amstrad 1512 PC you sometimes hear a hissing or whistling noise. To silence it, hit CTRL S twice.

Pat Lawlor, Sandycove, Co. Dublin

HELP!

Speccy specs

I have had this brainwave about how to improve the Spectrum's graphics and sound, and am wondering if my idea is at all possible.

If you remember the ZX Interface 2, you'll know that it allowed you to plug in games cartridges. In the same way, could the power of the Spectrum be increased by an interface that had a ROM with improved sound and graphics capabilities?

If this could be done, Amstrad (or anyone else) would make quite a killing from Spectrum owners looking for a decent upgrade but, like me, unwilling to part with their trusty Spectrums.

Is any of this possible?

Bryan Morton, Bangor, N. Ireland

• Yes, it could be done. It's not even technically difficult. But just because something can be done doesn't mean it's worth doing.

The computer industry long ago decided that anything non-standard could safely be ignored. Suppose someone did produce an interface like you describe: perhaps, as you claim, a lot of Spectrum owners would buy it. But not all of them would, and software houses would then have to produce two versions of all their software – one for the standard Spectrum, and one for your improved machine. Or, they would think, we'll just produce a standard version and that will run on every Spectrum.

So your improved capabilities would never get used. So fewer Spectrum owners would bother to upgrade. And so on.

You only have to look at the situation with Spectrum +3 disks to find evidence of this line of thought.

Technically, your idea is a brainwave. But commercially, I'm afraid, it's a bummer.

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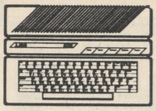
TIP

Printer location

Many thanks to your magazine and to David Axford and Chris Bryant for the tip on rejuvenating the PCW print head. Every good tip deserves another, and the following may bring relief to some of your readers.

This may apply to other makes, but the PCW printer has only a short lead, and as with any printer takes up valuable space. There's no need for special leads, stands, shelves etc. though. Simply put a generous blob of Blu-tac under each of the front corners of the printer, and you will find that it will sit quite securely on top of the monitor, even though the rear three inches overhang.

John Brand, Banstead, Surrey



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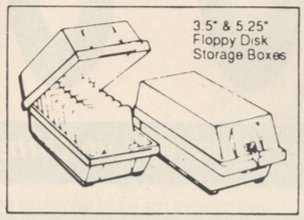
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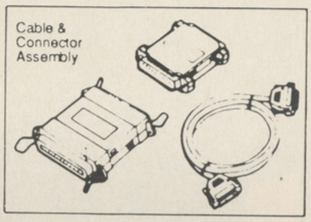
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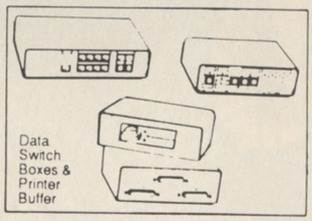
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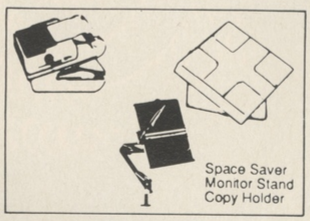
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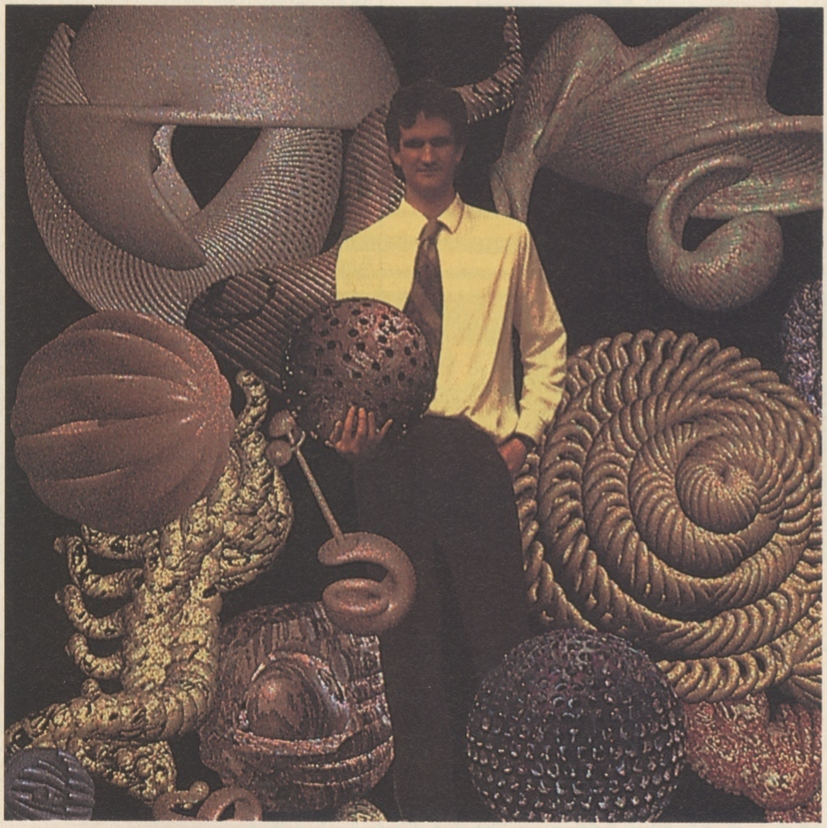
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The shock of the new: Andy Storer meets Wiliam Latham, the man behind the most stunning



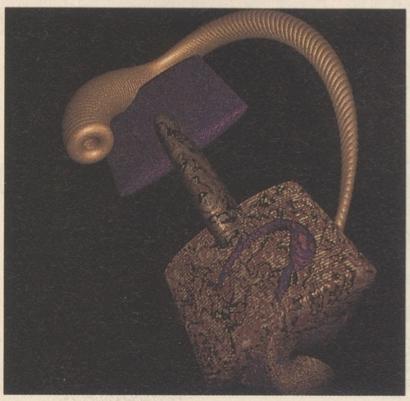
These days, Picasso programs in pixels. The-Conquest Of Form is the first major one-man exhibition of computer art in Britain by the only exponent in the field using programming languages as opposed to paint packages. William Latham's work has attracted wide critical acclaim for its distinctive marriage of Art and Science, leading some commentators to herald it as a new art form. Latham himself prefers to compare the impact of his work on traditional artforms with that made by Cubism.

Using IBM mainframes running custom software more used to handling engineering component design, Latham has written a complementary complex model manipulation language – *Form Synth* – which effectively treats the emerging designs with the disciplines of modular sculpture. IBM's reasons for sponsoring the work are obvious. Being able to create infinitely textured, highly complex models has tremendous potential for developing marketable packages for architects and designers.

Dates and places

The Conquest of Form can be seen at Bristol's Arnolfini Gallery until mid-January and features large format Cibachrome prints, computer animation, interactive displays and stereoscopic images. The exhibition then moves on to Colchester, Milton Keynes, Halifax, Barnsley, Newcastle, Edinburgh and Folkestone.

Models are originated in low-resolution 64 x 64 pixel form as wire-frames before being rendered. At this stage, the artist is merely setting the parameters of the designs to be generated – deciding which perfect forms to synthesise and which array of colours to employ. The language





art

computer graphics yet



• William Latham consults his blueprint for the next transformation



• A close-up of his 'evolutionary tree of forms'

Portrait of the artist

After graduating in Fine Art from Oxford University and moving to the Royal College Of Art to study sculpture and print-making, 27 year old William Latham's first introduction to computers was with a humble BBC where he began to program 3D object manipulation routines in Basic. Believing computers were a largely unexplored avenue for the artist, and after seizing opportunities to lecture part-time in computer graphics using Macintoshes and PCs, he began to develop a 30ft by 6ft drawing – "an evolutionary tree of forms" – in biro! This formed part of a PhD thesis entitled "An interactive computer graphics system for designing complex forms" and acted as a blueprint to show how 'perfect forms' – cones, spheres, cubes etc – could be progressively transformed into complex organic shapes.

IBM was sufficiently impressed with his efforts to offer him a post as Visiting Fellow at its Scientific Centre in Winchester. He is now based there full time and has dispensed with traditional artforms completely, preferring to sculpt directly on the computer screen.



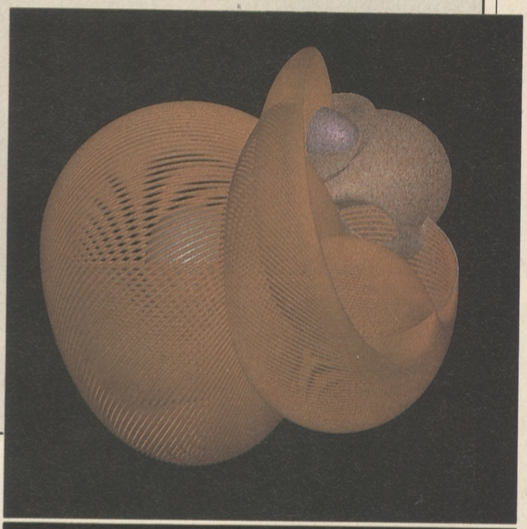
used is sufficiently flexible to be able to describe quite sketchy combinations of colour – for instance Gold would be described as light, pale yellow, metallic.

The lo-res vector graphics can be rotated and oriented in realtime and are then gradually textured, lit and blended as they are given progressively higher resolution. By the time the image is ready for ray-tracing – imbued with an authentic appearance derived from lightsource positioning – the model will have a resolution of at least 2048 x 2048 pixels. Texture is generated in 3D using fractal techniques incorporating randomisers such that the object acquires the appearance of polished metal or glossy plastic. The hardware used is sufficiently powerful to allow a fully textured model to be produced in around six minutes. As such, the process of origination is perhaps the most pliable in all art production; there being no real notion of finality. The image is generated, modified and scanned to slide output. Or it's erased. ●

Hard copies

These photographs are screens dumped to slides. Latham is currently developing other means of output using holograms and full colour stereoscopic monitor images. Another possible avenue for output is provided by the US firm *3D Systems* that has pioneered a machine which builds up layers of ultraviolet curable polymer to form solid stand-alone 3D models.

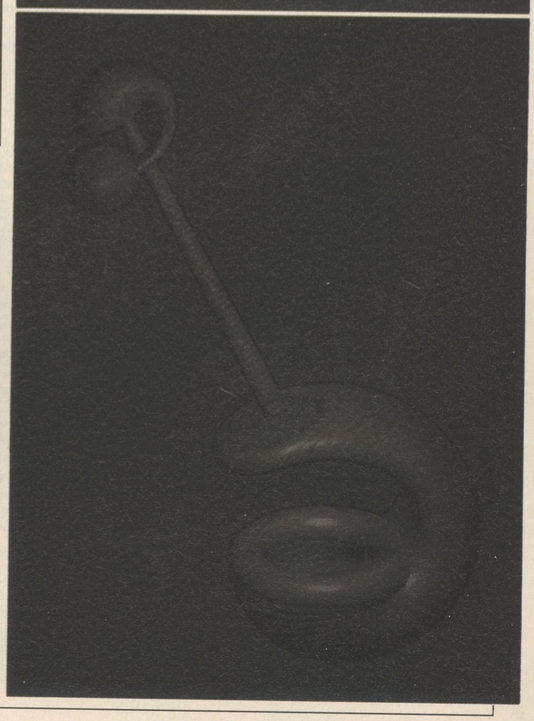
Latham's also produced a six minute animated film of a variety of these objects in motion, which features one incredible sequence where you're journeying through their interiors. As you might have guessed by now, he's a sci-fi fan keen on *Alien* and would love to provide motion picture special effects.



A grand idea

At present IBM has no plans for commercial release of the software employed but has given Latham the opportunity to sell his work to the public. If you want a piece of the future it'll cost you between £500 and £1,000.





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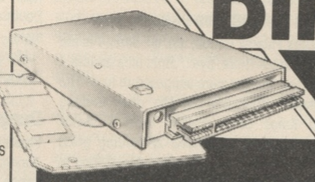
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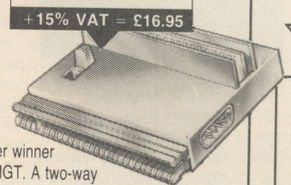
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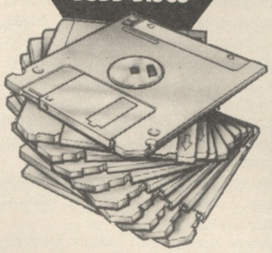
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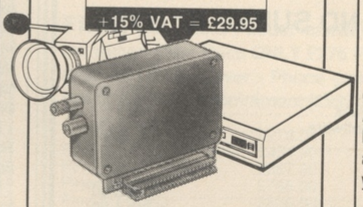
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ST

There's no business like...

"Alexandra Palace? Ooooh, um, no. Sorry, I'm not sure how to get there. Bye..." Hold on a minute. I thought taxi drivers were supposed to have The Knowledge. Obviously not the ones flocking around Kings Cross station. And it seems they're no longer interested in earning gross amounts of cash; none of them were willing to take me and fellow hacks to the Atari Show at the Ally Pally. I'm sure it was that odd-looking Gary Barrett chap hovering round me at the time that put the drivers off.

Eventually I got to the show, and discovered many interesting new products and heard lots of gossip. Here's a much condensed report. Expect particular packages to be dealt with in greater detail in forthcoming weeks.

Atari hard disk for £399

Power Computing has come up with a spectacular offer: an Atari SH205 20Mbyte hard drive for £399.95. Wow! That's even cheaper than Third Coast's drive which comes in at £399 plus VAT (£458.85).

The reason for this incredibly low price, which is two thirds of the recommended retail price, is because Atari has officially dropped the SH205 and replaced it with the Megafile 30 (the 30 standing for 30Mbytes). The Megafile 30 is apparently in limited supply and won't be shipping at full steam until next year. It will retail at the SH205's RRP of £599. Power Computing is on 0234 273000.

Frontier has a new book entitled *Everything You Need To Know Before Buying A Hard Disk Drive For Your Atari ST System*. Great title lads, but you forgot *And Why You Should Buy Supra Rather Than Atari, Third Coast, Power Computing etc etc.*

Sticking to the hard drive theme, Condor International announced the Integrater, which comprises a 20Mbyte hard disk, 3.5" double-sided floppy disk, real-time clock, monitor switch and a multisynch monitor controller. Base price is £649, to which you may add £100 for an additional 3.5" or 5.25" floppy, £350 for a multisynch monitor and £140 for an omnispeed modem. Condor is at 3-4 Ashburn Gardens, Kensington, London, SW7 4DG.

New from HiSoft (0525 718181) are *Craft 2* and *Tempus 2*. Available next year are *HiSoft C, HiSoft Forth* and *KnifeST*.

Sadly no *Multiface* from Romantic Robot yet. But, according to MD Alex Goldscheider, it's due in a couple of weeks. And in January of next year you'll be able to add a disassembler ROM to the black box for £19.95. Details on 01-200 8870.

Cyber Paint 2, Cyber Sculpt, Cyber Texture and *Microbot Design Disk* are new products to look out for from Electric (0954 61258).

Microdeal has an incredible number of new packages: *Talespin* (game creator), *Personal Finance Manager, Jug* and *Grail Adventure* among others. Steve "*Goldrunner, Jupiter Probe, Leathernecks*, etc, etc" Bak told me that *Fright Night* won't, after all, be appearing on the ST. He claims that the demands of the game are too much for the ST to cope with, so only an Amiga version will appear. After *Fright Night*, Steve will leave Microdeal to set up his own development team.

Tune in next week when I'll complete my rundown on product announced, or displayed, at the ST Show.

You can call me PAL

A Programmers Advice Line has been set up to bring beginner and expert programmers together to exchange information on – wait for it – programming. PAL, officially supported by HiSoft, will initially cover (unsurprisingly) HiSoft's various products including *Power BASIC, Devpac* and *C*. The group eventually hopes to cover languages from other manufacturers.

A regular newsletter is planned which will feature news, reviews, hints and tips, and tutorials on particular programming languages. Doubtless it will go down a storm with programmers.

More information from PAL at **42 York Rd, Raleigh, Essex, SS6 8SB**.

Dungeon Master Editor

Frustrated fans of the fabulous FTL *Dungeon Master* will no doubt be pleased to know that Softex has released the *Dungeon Master Editor*, a hints and tips booklet plus game redesigner on disk.

The booklet is a revised *Way of the Firestaff*, which is simply a collection of information and maps of the game. Possibly of most interest, though, is Ed Penman's cheat routine. This allows you to customise the game to suit your needs. You can alter saved-game maps, remove secret doors, unlock all locked doors and print all fourteen levels of the dungeon.

ST/Amiga Format magazine number 5 (available from Future's Back Issues department on 0458 74011) contains a cut-down version of Ed's cheat program; there's only provision for customising the first two levels of the game. The £9.95 *Dungeon Master Editor* is obtainable from most dealers – like Software Express (021 3283585).

Elite hidden hack screen

on *Elite* nter SARA when asked for the code the first time. Enter the correct code from the manual when asked for the code a second time. Press a key to get to the 'Load new commander?' prompt. Hit N. Press the asterisk (*) on the keypad to get into the hack screen. From here you can alter any detail regarding you and your craft's status.

Type in any number between 0 and FF (you don't need to understand hexadecimal to use the in-built cheat) when confronted with 'Change byte number?' Enter a number between 0 and FF to place into the specified location. After finishing your edits press [Esc] to continue with the game. Following are a few of the values that may be entered and their effects:



Byte	Value	Effect
1F	01	Fuel scoop
20	01	Escape capsule
23	01	Energy bomb
26	01	Docking computer
28	01	Galactic hyper drive
31	01	ECM jammer
32	01	Cloaking device
34	03	Large cargo hold
8B	01-08	Mostly Harmless to Elite

Richard Monteiro

PC UPDATE

Commanding lead

If you have trouble with DOS and can't get to grips with file handling commands, you may find the *Norton Commander* (named after Peter Norton, the founder of the company) helps clear things up. It's a utility program which provides a front-end for DOS overcoming most of its obscure syntax.



The *Commander* presents a directory panel on screen, with the option of a second panel. This makes file copying easier and its also possible to move files from one directory to another and to rename directories directly, neither of which can be done through DOS. The program's now reached version 2.0 and offers pull down menus for most of its options, a file viewer which can handle *Lotus 1-2-3* files and dBase files directly, show directory trees and compare directories highlighting any differences.

It's a shame the program can't be made RAM-resident, but it's still a useful extension to DOS. It costs £63.25 and is available from In Touch (0222 882334).

In the process

Word processors are very subjective things. Not only do most people have very particular requirements for a w/p, many learn the idiosyncracies of one and are understandably loathe to go through the learning process again. This is one of the main reasons behind the prolonged lifespan of *WordStar*, which started life as a CP/M program many moons ago. At that time, *WordStar* was about the only competent word processor so everybody bought it and everybody learnt its arbitary set of control key sequences.

Two programs released in the last couple of years seem to get round this 'key sequence addiction' admirably: *Protext* and *TopCopy*. Both are British products, both are relatively inexpensive (under £100) and both offer distinct advantages for certain types of work. *Protext* has grown up from earlier versions on Amstrad PPC and PCW machines, and is particularly good at low-level control of page formatting. It has an internal command language consisting of two letter commands you incorporate into your text, and a sophisticated macro language which can automate all kinds of document-based procedures. It also includes a 70,000-word spell checker, box manipulation and line drawing, and comes with a good selection of printer drivers. *Protext* comes from Arnor (0733 68909)

TopCopy is a very slim and efficient beast with some really nice features. For a start, it's completely machine-coded, so it's very fast and auto-reformats text while you're typing. Control in edit mode is via the function keys, and there's a pop-up help screen always available to remind you of what they do. A separate menu system displays all the other features of the program, which include a fast spell checker, good text import controls and a comprehensive mail-merge scheme. The most useful feature of *TopCopy*, though, is its ability to run in memory-resident mode, the only w/p I know of to do this. Not only do you have the facility of popping-up *TopCopy* from your spreadsheet, database or whatever, but you can also grab the contents of the underlying screen (text mode only) and import it directly into a document. A good set of macros lets you automate the process, too, and yes, you can grab addresses and the like directly into a mail merge. Thank Innova Software for *TopCopy*, on (0453 835379).

Feedback

If you find an item in this column of particular interest, have any hints or tips on DOS or related PC matters, or strongly disagree with any of my ramblings, please drop me a line. Write to **PC UPDATE, New Computer Express, 4 Queen Street, Bath BA1 1EJ**. Sorry, but I can only answer letters through this column.

Simon Williams

A new batch

The idea of programming your PC may strike the fear of Spectrum into you, but before you skip down to the next item (a very interesting piece on word processors) stop and consider your PC's very own programming language and the useful purposes to which it can be put. The ignominiously named 'batch' language is actually a very useful set of commands which can help to keep you computing life simple, for a very small outlay in time and concentration.

An example problem: you regularly back up all the text files from the word processing sub-directory (call it \WP) of your hard disk to a floppy disk (you do do this, don't you). Say you keep copies of all files with TXT, LET, INV and REP filetypes. The following batch file would do this for you in one easy step.

```
cls
echo off
echo Backing up all TXT, LET, INV and REP files from the \WP directory
echo of drive C to A. Put a backup floppy in A and
pause echo.
COPY C:\WP\*.TXT A:
COPY C:\WP\*.TXT A:
COPY C:\WP\*.TXT A:
COPY C:\WP\*.TXT A:
echo.
echo All files backed up. Do it again soon.
echo.
```

As it stands this file will work happily under MS-DOS 3.2, but relies on all the files fitting on a single floppy. You should be able to see the power of just three batch commands: cls, echo, and pause. cls clears the screen (as in most BASICs), echo displays messages and blank lines on the screen and pause displays a message of its own and waits for a key press.

To enter this program, use a text editor like RPED or SideKick, and save it as a file with a .BAT filetype. Typing the name of the file (without the BAT) will then run the program. Why not send in your favourite batch files. I'll include the best in the column.

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AMIGA BLITZ

Thumbs up for the Amiga

Contrary to the general consensus of informed opinion, the Amiga is finally starting to be accepted as a viable alternative to the IBM standard by many leading business dealers.

Starcol Business Centre is a business computer retailer based in Bath that has recently added the Amiga to its ranks of PC clones. When I questioned the Managing Director of Starcol, Verity Kingston, about its sudden interest in the Amiga, she explained that she now felt that the Amiga had reached a level where it can be considered as a serious contender in the business market.

Verity continued, "...We were surprised by the amount of corporate users that were wishing to use the Amiga as a business computer. Originally, we did not view the Amiga as a viable business computer but once such names as the *WordPerfect* corporation jumped on the Amiga bandwagon, our view changed...

If a customer comes to us for a computer system for carrying out such tasks as word processing then we probably wouldn't recommend an Amiga; there are cheaper systems available. On the other hand, if a customer required a system that could also handle graphics or music, then we wouldn't hesitate in recommending the machine. The release of the Amiga BBC Emulator also makes the machine an attractive alternative for education establishments...

For many business users, the Amiga's advanced graphics and sound capabilities coupled with its MS-DOS facilities make the machine an attractive business computer..."

Starcol can be contacted on (0225) 311276.

A1000 users left behind

What has the future in store for Commodore's original Amiga, the model A1000? Commodore dropped the machine – once its flagship – little over a year after its original release in favour of the two current models.

While third party support is still strong for the A1000, all Commodore's current developments and enhancements to the Amiga range look set to leave A1000 users out in the cold.

The best example of this is the new enhanced chip set (ECS). The main chip that is to be replaced when the ECS arrives is the graphics chip, Agnus. The original Agnus used within all A1000s and the first batch of A2000s is a rectangular affair, but the current 'Fat' Agnus is square in shape. Consequently, the ECS upgrade will not be available to A1000 and some A2000 users.

Having ECS within your machine will not make an awful lot of difference for a while, but once applications start arriving that access the added features offered by the ECS upgrade, A1000 users will be slowly but surely be left behind.

I personally feel that it is unfair of Commodore to ignore A1000 owners. The machine can hardly be viewed as geriatric, as most users will have no doubt bought their machines only a couple of months before the launch of the 500 and 2000 models. Asking for a completely separate set of chips to be produced is perhaps asking too much, but maybe Commodore could produce an adaptor board?

1.3 Update

According to Kate Jackson, Regional Amiga Sales Manager at Commodore, the new releases of *Workbench* and *Kickstart* will soon be with us. Kate was unsure as to a precise release date but it seems likely that the upgrade will be available within two or three weeks.

The new release will be sold in two parts. *Workbench* and *Extras* will sell for £15, which also includes new documentation, but for A500 and A2000 users at least, upgrading to the new version of *Kickstart* will cost a further £15.

The business of upgrading an A1000 to the new *Kickstart* is not so clear. While Commodore Technical support assured me that *Kickstart 1.3* would appear on disk, they were unsure as to how it would be sold. One can only guess as to how Commodore will handle the disk-based *Kickstart* but one solution would be to bundle the disk with the *Workbench* upgrade as was the case with *1.2*.

Beating the Mafia

It's not unusual for game programmers to leave cheats and other oddities with a game, but the programmers of ActionSoft's Capone went one step further. Hidden away within the game is an extra screen but I'll not tell you what is contains; that's up to you to discover.

To access this mysterious screen is easy. When outside the post office, look for a ball on top of the flag pole. If you shoot this ball once your score will jump; shoot it again and you will enter the hidden screen. Fro m this screen, if you fire again you will be sent straight to the final confrontation in the bank.

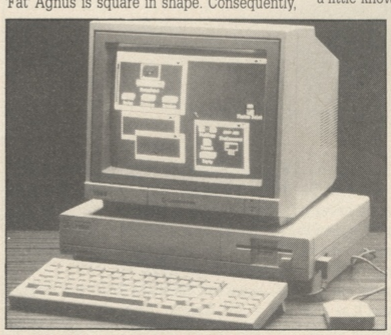
Aye Up AI!

Looking through any of the various American Amiga magazines available within this country is always a surprising affair. While we are still tinkering with word processors, the Americans are using their Amigas for such applications as Artificial Intelligence.

Magellan is a powerful Expert System from a little-known American software house called Emerald Intelligence. EI claim that the program is far more powerful than any similar systems on the IBM PC, PS/2 or the Apple Macintosh.

Magellan can be used to carry out diagnostics and evaluations using simple BASIC type structures such as 'IF – THEN'. By simply entering rules using the package's inbuilt programming language, complex expert systems can be designed. The package can be used for a whole number of applications such as adding life-like intelligence to animations and even games.

Jason Holborn



• Amiga 1000 – has it had its chips?

SPEX

Speccy loyalty

Glance through the small ads section of any computer publication and you'll see a vast quantity of Spectrums for sale. It's enough to make me cry all over my rubber keyboard.

This mass exodus can be partly blamed on the recent upsurge in interest concerning those two expensive beasts the ST and Amiga. It seems to be the case that when an owner of a 'humble' Spectrum scrapes together 300 quid he immediately abandons his loyal computer-cum-beermat in a fit of techno-snobbery.

Just because you've gone 16-bit doesn't mean there's any need to rid yourself of a machine which can still give a great deal of enjoyment. In many ways, having two computers of different price and power is a good idea. The state-of-the-art one can be used for tasks your Speccy isn't too good at – like wordprocessing, spreadsheets and the like. And let's face it, unless you win the pools or become hitched to one of Alan Sugar's offspring you aren't going to be able to afford more than the occasional 16-bit game – not at £25 a throw. This leaves your finances free to purchase from the wealth of (cheaper!) Spectrum software available. It might not look so pretty or sound quite so sweet, but in many cases will keep you playing for longer.

In short, the message is clear; if you must upgrade, don't sell your Speccy, because when the amazing 16-bit graphics and sound become tiresome you'll be dying for a wholesome game of *Matchday II* or *Exolon*.

Amstrad again

After a few weeks' worth of Amstrad criticisms I thought I'd leave them alone for at least a column or two. Alas, the fuss over the +2A has changed all that.

Its only outwardly visible difference is its colour – the new model's an exciting...black. Open the computer up, though, and things become much more interesting.

The +2A's insides have been redesigned to closely resemble the +3's circuitry. One advantage of this is the provision of a Centronics printer port. However, one of the worst features is the failure to modify the expansion port. This renders really useful peripherals inoperative. Add-ons like the Spec Drum, Plus D interface and the range of Multifaces quite simply won't work. Software incompatibility could also be a problem, but at the moment it's not clear exactly what will load and what won't.

If you are looking for a new tape-based Speccy this Yuletide, go for either a grey +2 or, better still, a second-hand 48K/Plus/128K. You can pick them up for under £50 in some cases, and with repairs priced at only £20 maximum it's well worth taking the risk.

Jumble sale

Just as you've managed to peel the last of the PC Show stickers from your body, and the old digestive system has recovered from that Earl's Court hamburger, it's show time once again.

The Christmas Microfair is definitely on at the Horticultural Halls, Saturday 10th December. After the glitz and glamour of the PC shebang, it's refreshing to see the Microfair is still very much the jumble sale of the computing world, with lots of bargain software and hardware. Prices are £2.50 for adults and £2.00 for children under 14. Details and tickets from **Mike Johnston, ZX Microfairs, 71 Park Lane, London N17 0GH**.

Who knows – you may be unlucky enough to see either (a) a Sinclair Professional or (b) me! Which is worse?



• Garfield – best licence of the year?

Artistic licence

For me, *Garfield* was one of the better licensed games of this year. It captured the spirit and personality of the fat feline, and wasn't a third-rate product chucked out to cash in on a popular character – we've had enough of those in the past!

Not surprisingly, seeing the sizeable mounds of cash the first one made, Softek is currently working on a sequel said to celebrate *Garfield*'s tenth birthday and based on a wintry theme. Softek is also planning to unleash a game based on the *Peanuts* cartoon. A bit of a turnaround in licence negotiations, this one. The owners of *Peanuts* actually approached Softek and demanded a game.

More licensed fun coming to a Spectrum near you some time in the nearish future includes these interesting titles from Grandslam. They've tied up games based on Arnie Schwarzenegger's latest, *The Running Man*, the *Dandy* comic, and *Thunderbirds*. The latter is a graphic adventure which sees Brains, Lady Penelope, Parker and the rest doing battle with super-baddie The Hood.

Software licences are definitely getting more obscure – maybe there aren't enough celebrities to go round! Gremlin, for instance, have repackaged their *Rampage*-esque *T-Wreks* and *The Muncher* to tie in with the monster star of the *Chewits* advert. Alternative, on the other hand, are working on a *Postman Pat* game. An ultra-violent beat-em-up it's not. Zeppelin scoop the lot in the obscure licence stakes, though. This Christmas will see *Jocky Wilson's Darts Challenge*. Retailing at £2.99, the game comes complete with a home beer brewing kit.

Robin Alway

The ultimate tip

If you're stuck on the boring first level of a game when you really want to get to the 72nd stage and complete the thing, here's a tip which should work with some multi-load titles.

Firstly, load the main game as usual. Then load the first stage header and fast forward to whichever level you want to start on. Miss out the header and load the main block only.

I haven't had a chance to test this out yet, so if it doesn't work send all your complaints elsewhere!

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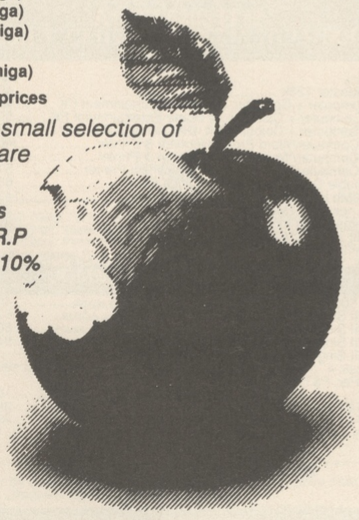
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Listing

Ha ha! Another program which your machine was not made to do. The routine below in a basic loader form will give your display area more length up and down. The program takes out the top and bottom borders, allowing sprites (ONLY) to be displayed there. This trick was discovered at least two years after the machine was released, and is now an everyday routine for many coders. Games like *Terra Cresta, Kettle, Scout, W.A.R.* and *Delta* have all taken the borders away, giving the C64 a more 'professional' display just like that of an arcade machine.

```
1   B=49152
2   FORL=0TO84:READA:POKEB+L,A:NEXTL:SYS49152
10  DATA 120,169,192,141,21,3
11  DATA 169,18,141,20,3,169
12  DATA 27,141,17,208,88,96
13  DATA 169,1,173,19,192,201
14  DATA 1,240,22,201,2,240
15  DATA 36,169,1,141,25,208
16  DATA 169,127,141,13,220,169
17  DATA 129,141,26,208,76,49
18  DATA 234,169,56,141,18,208
19  DATA 169,19,141,17,208,169
20  DATA 2,141,19,192,76,31
21  DATA 192,169,249,141,18,208
22  DATA 169,27,141,17,208,169
23  DATA 1,141,19,192,76,31,192
100 POKE53269,255:REM *TURN SPRITES ON*
101 CLR:B=80:C=34:REM *RESET VARIABLES*
102 POKE16383,0:REM *CLR DATA AT BORDER*
103 REM*******************************
104 REM*       POSITION SPRITES!!!!!!      *
105 REM*******************************
106 REM
110 FORL=0TO7:POKE53248+A,B:POKE53249+A,
    C:A=A+2:B=B+24:NEXTL
```

As usual we've implemented some pokes to make the routine as flexible as possible – some programmers may wish to have a bitmap displayed for graphic work. To make this routine work with bitmap we have to make a few slight changes to the machine code program:

POKE 49207,19:POKE 49225,27 (normal display area)

POKE 49207,51:POKE 49225,59 (will display the bitmap)

If you do half and half, for example:

POKE 49207,19:POKE 49225,59 you will get a split screen effect with bitmap & text screen.

If you Poke 16383 with a range from 0-255 the border will change as if it was the first byte to a char set. If you poked 16383 with 255 it would turn all 8 bits on, thus leaving the border filled in.

Cheaters

Well here's something to be happy about – a complete cheat for that *Blasteroids*-type game *Master Blaster* (Zeppelin). All you have to do is load the game as usual, and once it has loaded reset the machine and type your choice:

For infinite lives:
POKE 17614,173
For infinite smarts:
POKE 23515,44
POKE 23529,44
And for infinite shields:
POKE 21798,44
And if you want to restart the game from reset just type:
SYS 30000

Public domain disk offer

You've read all about demos, but have you seen any? If you want to get your hands on an action-packed disk of demos, each loading on a cycle basis so you don't have to keep typing "load" etc. send a postal order for £1-50 to cover the cost of disk, postage and packing to **Disk Offer, 422 Somercotes, Laindon, Basildon, Essex SS15 5UQ**. Please allow 28 days for delivery. And don't forget to include your name and address!

Loadsablocks

When visiting the Commodore show a few weeks back we saw a rather cool demo by "NATO" on one of the stands. The demo was made up of around 6 parts, each one different from the last. The one that caught my eye was a part with a real cool picture of Rob Hubbard scrolling across the screen. This demo can be found on Compunet, though you'll have to try mailboxing "slayer" (a NATO) member for a location.

Spitting stuff

Shoot Out ▪ Martech ▪ £9.95cs, £14.95dk

Set in an old gulch with lots of varmints to deal with, the idea is to shoot the hell out of the baddies and be nice to the goodies. *Shoot Out* should have shot into the shops as you read this.

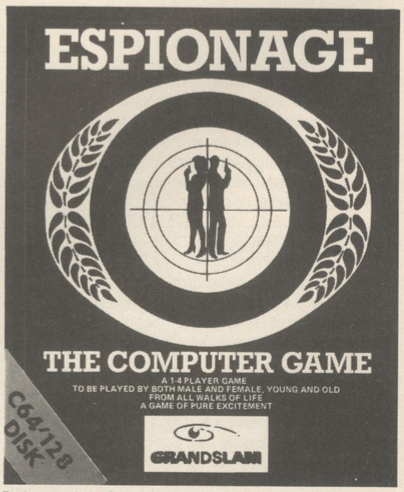
Spitting Image ▪ Domark ▪ £9.95cs, £12.95dk

Those rubber puppets are back in a new computer game from Domark – I can't wait to see if they've included George Bush as the new American president-to-be, and, being a *Neighbours* freak, I wonder if Kylie's in there – or any other of those characters from Ramsay Street.

Espionage ▪ Grandslam ▪ £9.95cs, £14.95dk

We don't really know much about this game yet, other than the fact it's a board game. Watch this space for further details...

Ian & Mic



• Espionage, from Grandslam

CPC centre

Blunders and drag-ons

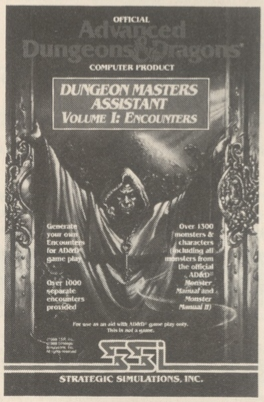
In the very first CPC Centre one Amos Walker broke the astonishing news to an ecstatic readership that *Pool of Radiance* would be coming out on the CPC. He was wrong and it isn't: a startled US Gold rushed to admit that they didn't (in their infinite wisdom, perhaps?) in all honesty think it worth their while, and had absolutely no intention of producing a CPC version of the role-playing smash hit. They are, however, bringing out other *Advanced Dungeons and Dragons* (*AD&D*) products, the first of them being *Dungeon Master's Assistant, Volume I: Encounters.*

This isn't a game in itself, but is designed as an 'invaluable aid' to the poor old dungeon master (DM) who controls the world in which *AD&D* adventures are set. It's used in conjunction with the *AD&D* role-playing books.

The idea is that if the DM runs short of scenarios for a monster encounter then he uses the program to generate a random encounter. If it's unsuitable then he can simply scrap it and have another go (phew! high-tech stuff, eh?). Thus all the tedious work is done for you: generating hit points (i.e. how much damage something can take), deciding what weapons they have, how many monsters there are and so on.

The computer doesn't actually take part in the role-playing session, but it can be used to generate encounters in the middle of a gaming session. And if you want to bore the players, generate it while they're waiting! Encounters can either be printed out or stored on disk for later use.

Dungeon Master's Assistant is due out in February or March of next year and until that glorious day there's no way of knowing how fast or sensible it is at generating encounters. (Let's hope that US Gold keep to their release dates a bit better this time around. We don't want a repetition of *Heroes of the Lance*, with review copies being sent out accompanied by brazen claims of 'a couple more weeks before it's finished' and then the game taking months and months to arrive.)



The *Dungeon Master's Assistant* is of course only a part of the current wave of roleplaying licences. There's *AD&D*, *Chainsaw Warrior*, *Warhammer* and *Warhammer 40000* (do you know the difference? No, nor me) all signed, sealed and waiting to be written. Why? What on earth is all this role-playing stuff about? Well, something that might offer a glimpse into why roleplaying has suddenly acquired this enviable ability to get software development managers running around signing licences like headless chickens (erm... headless chickens don't sign licences, actually – ed.) is the phenomenal success of a program based on, but not licensed from, a roleplaying game.

The roleplay background came from the game *Traveller*, a long in the tooth product recently revamped and relaunched by its author, Marc W. Miller of Games Designers Workshop. Not a lot of people know that... It wasn't the game mechanics which were copied, though, but rather the contents, the backdrop to the game. You may have heard of this program – it was called *Elite*. Messrs Bell and Braben would no doubt claim they were 'inspired by' *Traveller* rather than anything else. And considering the hefty royalties they'd have to be pretty stupid to be anything else.

You may well ask

Not so long ago a company called dK'Tronics produced a RAM expansion for the 464 and 664, to give them something like the capabilities of the 6128. In simple terms, more usable memory. But where can you buy them from nowadays? Answer: RAM Electronics, who also, incidentally, make the Delta joystick and Music Machine, amongst other things. Their phone number is 0252 850085.

(You never know, perhaps people will desist from stopping me in the street and grovelling for a reply – I'm sick to death of this subject, so I am.)

French

It's not so long since people were jabbering excitedly about the prospect of software written on the continent being imported into the country. I don't recall seeing any – at least not for a while: the last big title must have been *Captain Blood*. I do hope the translation programmers get their act together.

(I once heard a story, probably completely untrue, about the Durell game *Turbo Esprit*. Apparently the Spanish version was held up for 10 days – because the programmers couldn't find out the Espanol words for 'armoured car'. Surely apocryphal, but I pass it on for what it's worth.)

Game tip

I've always enjoyed *Impact* (Audiogenic), and if like me you really hate getting stuck you might appreciate having the passwords to take you to the higher levels:

Level	Password
11	AMEN
21	BOOK
31	CROW
41	DOOR
51	EDGE
61	FALL
71	GATE
81	USER

Mixed blessing

The news that Comet is now doing a Santa Clause and offering the CPC range at £50 off across the board proves to be something of a mixed blessing. On the one hand it's great that the machine is available at a better price, but I'd be inclined to agree that, at £449 for a 6128 with colour monitor, TV modulator, desk, joystick and bundled games it's still badly overpriced in the cutthroat Christmas market.

On the other hand, it's not such good news that one giant is using its massive buying power to sell at a price cheaper than the trade can obtain the CPCs at themselves. The result, surely, is that independent traders will have no choice but to drop it; and when Comet, in the post Yuletide slump, do the same, the poor old CPC may well be left high and dry.

Steve Carey

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Gnome more silly puns

Level 9 are well-known to PCW owners for two reasons. One, they produce fun adventures which centre round a quaint and ugly female gnome called Ingrid; two, they have a penchant for prefacing every word beginning with 'n' in their ads by a 'gn'. After a while this is gniggling.

Line calls

Never mind nonsense about other programs, let's get down to important things. How to make vertical lines across the page in LocoScript 2: type [+]UL[+]RA[-]UL. How to make continuous lines down the page: select half line spacing with [+]LS12 then put modulus signs (x) for the lines.

Now the company which has done for simplified orthography what the M25 did for London Traffic has followed up their game *Gnome Ranger* with a new adventure for Ingrid Bottomlow. After an encouraging reception from other machines' reviewers, it's available for PCWs for £19.95. Level 9 are on 0344 484258.

Checkmate?

Ah, Chess on the PCW... The battle of wits, of threats and counter-threats, staunch defence, surprise moves, outrageous attacks – and this is just between the makers of the programs. Amstrad (*Cyrus II Chess*) CDS (*Colossus Chess 4*) and CP Software (*Clock Chess '88*) were at it all year trying to show that their program played the strongest game.

Despite *Colossus Chess*'s stout defence, *Clock Chess* forced a resignation through a Press Release Attack. *Cyrus* played a quiet game and was swamped by *Clock Chess*'s relentless thrusts down the middle of the advertising pages.

Now CP have brought out an improved program, *Clock Chess '89*, and it looks like checkmate. It's a very strong program to play against – good club standard with some surprisingly aggressive and opportunistic play. Details from CP on 0993 823463 – it costs £19.95.

Afflicted with the box

Whatever happened to those clear plastic disk cases, now replaced by laminated plastic wallets? No doubt they went to the same planet that took slide rules, Dandelion & Burdock and Bill & Ben.

Complaints persist, despite irritated explanations from Locomotive Software, Amstrad and PCW pundits such as writers on the magazine *8000 Plus*: you don't need those boxes, they say. Your disc is safe enough in its thick plastic jacket – compare it with a PC floppy, they continue.

Ah, comes the reply, but there is always just a chance that the data might slip out if the disc is not stored upright, not wrapped in tin foil and attacked by some maniac with an unlicensed pump-action X-ray machine. Where can we get some of these cases, please?

Well, it is conceded in a tone of resignation, you can get them from **Redcar Computing of 8 Dundas St, Redcar, Cleveland** (tel. 0642 486643) for 39p each, p&p free.

Rob Ainsley

QL corner

Food for THORt

It is getting on for Christmas and the QL market is bursting with news. On the hardware front, after some management troubles CST has surfaced in Denmark, and is contactable at Lundeskovsvej 5/1, 2900 Hellerup in Denmark. Production of the THOR XVI has apparently been resumed: For the benefit of readers unfamiliar with this machine, the THOR XVI uses a 16-bit 68000 processor (unlike the 8-bit 68008 in the QL), is about three times the speed of a QL and comes with an excellent keyboard, a new operating system which is very largely QDOS-compatible, and looks professional to boot (no pun intended). QL users seeking an upgrade path should consider the THOR XVI very seriously indeed.

• As of this week, Express has a new QL expert. You can get in touch by writing to New Computer Express at the usaul address.

Most software houses have ensured that their major products are THOR-compatible, and THOR XVI-compatible too. Certainly most of the PDQL and the Digital Precision range of products (including the *TURBO SuperBASIC* compiler) are THOR XVI-compatible.

Young pretender

There is a rival product, of sorts, to the THOR XVI: a QL emulator available to run on the Atari ST. Amazingly, this emulator – which is a plug-in circuit board – very accurately mimics QDOS, and provides a useful speed improvement of about 2 x over the expanded QL. As yet this product is little talked about – details are available from Strong Computer Systems (Bryn Cottage, Peniel, Camarthen, Dyfed SA32 7DJ, Tel: 0267 231246).

Multilingual QL

One of the QL's unique – well, OK, almost unique – features is the extensibility of the command language. This means that while on other computers you are stuck with the names (corresponding to procedures and functions in BASIC – but there are analogies with other high-level languages too) defined by the originators of the language, on the QL you can "add on" your own commands and functions to *SuperBASIC*.

This means that the language is not static but is ever growing. However clever the designers of a language and those who implement it within a computer may be, it is clearly impossible to envisage all the uses that will be made of, and demands that will be placed upon, the end user, who is the most important part of the whole set-up.

So while users of most other micros have to be content with the computer they bought, with the QL you can extend the language and make it into just about anything you want it to be!

Outstanding toolkits are the *Supertoolkit* with about 150 commands (available from Care Electronics, 800 St Albans Rd, Garston, Watford, Herts WD2 6NL. Tel: 0923 672102) and the 200-command *TURBO Toolkit* (available as part of *TURBO* from DP, 222 The Avenue, London E4 9SE. Tel: 01-527 5493). The two are not competitors – they rather complement each other, having only a small overlap. We will look at each in detail at a later date.

Eric Simmonds

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BEEB BOX

Tone deaf

Everybody has got a phobia, and I am prepared to admit, in public that mine is computer music. Now I'm not saying that you can't make decent music using a computer-based system. Just that I don't like most of the stuff produced; it all sounds like old *Human League* records to me, without the singing.

Now I am sure that many of you will disagree strongly with me, but let me ask you a question – how do you think all this dreadful music in the charts is produced (Rick Astley, Kylie Minogue et al)?

However, I wouldn't deny anyone their pleasure – and so I'll move onto a quick look at the MUSIC 5000 Junior from Hybrid Technology.

This is a cut down version of their 5000 system without the AMPLE language, but including a superb display of a mixing desk and keyboard. From here, you can do your own mixing and playing of sounds.

Playback of prerecorded music is possible, and you can even create your own instruments.

The system is fully upgradable, and at

contender. Just please, please don't release any records with it, aaargh!

Press pun-ishment

Now for my beef of the week. In front of me is sitting a press release from Level 9 Computing concerning their new game, *Ingrid's Back*. However, I am only going to say that the game is available now, is a three-part adventure, needs sideways RAM, and will cost £14.95. The reason is that the release contains every juvenile pun on gnomes imaginable, and is in fact a good example of the 'very silly' form of press release.

The other, more common version is the 'pristinely pompous'. You know the sort of thing, 'This product is widely accepted by industry analysts as being capable of saving the universe', and so on. As a journalist I see hundreds of press releases, and this sort of thing is just plain irritating – so

Submission tips

I recently had a letter from a reader complaining about the treatment of a submission of his by a well known software house.

Now I am not going to comment on this case, but as someone who has seen a LOT of submissions I have sympathy with both sides. So here are some tips on how to become a software millionaire.

First of all, do some basic market research, i.e. find out who wants or needs software, and in what form. For example, a magazine will want a covering article, whereas a software house will want technical details.

Second, pack it up properly with lots of stiffening. Third, include full documentation on disk, and paper. Fourth, include a covering letter. Fifth, include return P&P, and sixth be patient!

MSX TRA

Monty tips

Kevin McGahan from Northern Ireland must be a really avid games player, because he has sent me loads of pokes and tips for MSX games.

There are too many to print in one issue of *Express*, so this week I will just stick to the tips for *Auf Wiedersehen Monty*:

Before loading the game, type in Key 1, "MONTY" and press RETURN. When the game has loaded, pick up the gun at Gibraltar for invulnerability to everything but the water crushers.

Items to take are as follows:

The Spanish football goes to Juventus, take the Chateau Blanc to Dortmund, the Danish bacon to Czechoslovakia, the steering wheel to Monaco, the cork to the boy in Amsterdam, the tulips to Juliet in Pizza and give the Mona Lisa to the Mafia fence.

Thanks for the tips, Kevin.

Pioneer value

I found it interesting reading Ian Harrison's letter in issue 3 regarding the Pioneer PX/7 computers.

These machines are amazing value if you are a video buff, and really can't be beaten at the price. You can even buy software designed specifically for video titling using these machines. The software is produced by Anglosoft and is available on tape or disk for £49.00.

One problem you might encounter if you purchase the PX/7 and wish to play games on it as well, or put it to serious business use, is its lack of memory. The PX/7 has only 32K of RAM, and most MSX software is designed to run on the 64K machines.

A way round this problem is to purchase the Neos RM/48 RAM expansion pack. This will cost you a further £49.99.

The video software and the RAM pack can be purchased from **D.L. Chittenden Ltd, The Broadway, Chesham, Bucks** (Tel: 0494 784441).

Pat on the back

Thanks to all those who wrote in to *Express* praising the magazine for supporting the MSX. Let me know

Christmas bonanza

I don't think I've seen so many new pieces of games software released at one time on the MSX! Not only has the quantity of software increased, the quality has likewise improved.

This next month should see the release of games such as Afterburner, Out Run, Galactic Conqueror, The Munsters, Pacmania, Trantor, and many more.

Also, with companies like Titus, Dinamic and Topo Soft now releasing titles with increasing regularity in the UK, the MSX format has never been better supported.

The MSX is still strong in certain parts of Europe, the Middle East, South America and – of course – Japan, and as most of the larger software houses produce games for export, it's worthwhile these com-

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PSsst!

A last look at the computer scene by cynical old hack, Private I

Hack to the future

The world really is rising against the humble hacker. They've been elevated into the Demons Of Our Time, responsible for the ills of modern life and with which no decent folk will have anything to do. On that basis, they're doubtless linked with acid parties, the *Sunday Sport* and the imminent outbreak of World War Three.

At least that's the impression you get from the national press. Give them a clearly identified minority and the tabloids will bash these wretched hippies/Argies/miners/hackers until they squeal.

So it was no surprise to hear that Tory backbencher Emma Nicholson wants hacking to be made illegal. The only oddity is that she didn't require them to pay off the national debt or be flogged daily at noon – whichever is the more satisfying. *The Daily Mail*'s wholly chortle-worthy "Why Computer Hackers Make Lousy Lovers" was in the same vein.

Never mind that most hacking is simply the unsociable in pursuit of the unusable. The hacker bashing season has been opened with a vengeance because National Security is at stake.

So, for once, thanks for a piece of American sanity. Reader Ian Gray has helpfully provided a cutting containing the thoughts of Robert Morris, the father of the hacker who caused the biggest computer gridlock on record. Morris says: "The notion that we are raising a generation of children so technically sophisticated that they can outwit the best efforts of the security specialists of America's largest corporations and of the military is nonsense. I wish it were true. That would bode well for the technological future of the country."

Over here, meantime, paranoia rules.

Don't let the fax get in the way of a good story

Cue fanfares – ta-ran-ta-ra! Hold the front page! An amazing, devastatingly innovative, mega, new fax service has been launched by Database – or Microlink, as the dear chaps call themselves in this context. Not content with delivering said announcement by Telecom Gold fax (hey! The medium is the message!), the wacky funsters have deliberately shown how not to communicate by being incomprehensible.

Try this.

"Microlink have come up with an instant answer for their su". For their su? Crazy people!

Then there's "...whether messages queued for transmission have be". To be or not to be, eh Microlink?

The true fun of it all is that the release banged on about how the service was too difficult in the past and how it had been improved. Droll or what? Answers on a postcard (and not by fax...)

Ploys will be ploys

It's good to see that the old ploy of "As seen on TV" is being wheeled out by US Gold on the packaging of *Thunder Blade*. It might just make the difference between it and *AfterBurner* in the oh-so-vital race for the Christmas Number One.

Of course, the ploy is not wholly without substance either. Not that US Gold has actually advertised it on television, as you might think. (Somewhat quixotically, it has chosen to blow £15 grand pushing a visual product on radio. But let that pass.) Yet *Thunder Blade* has indeed been on the box – appearing on the Sega ad for about a quarter of a nanosecond.

On that basis, we're pondering shoving "As seen on TV" on the front of *Express*. Whaddya mean, you haven't seen it? *Express* was there in considerable glory on the shelf in the newsagents in *EastEnders*. Well it will be. Eventually. Honest.

Maintaining standards

Computer folk are in danger of growing up. For aeons, the Advertising Standards Authority's monthly tome of offenders was riddled with computer firms promising the earth but only delivering a sod. Back in February 1987, the industry was branded as the worst of all for complaints. These days, they're all so damn smooth in their operations that problems are as rare as a Memotech owner with a sense of the ridiculous.

Thus, with 21 days of 1988 left, it is with some certainty that PSsst can present its award for the most outrageous advertising claim of the year. The winner? Display Electronics of south London (and don't say "who?").

According to the latest ASA report, the merry fellows claimed to have "20,000 feet of electronic and computer goodies". Over-egging the matter just slightly, it drolly added that it was "England's largest surplus store – seeing is believing!"

Well, up to a point. Notwithstanding the fact that Display sold the deservedly obscure Commodore P5000 for £49 ("with no software at all"), detailed investigation discovered that the shop consisted of a single room, measuring 15 by 30 feet.

PC SORROW

A couple of nasty production errors crept into last week's PC buyers' guide.

The price quoted for Vision's Advent PCXT10 Turbo in fact includes an EGA colour monitor – so the machine is even better value than we stated.

The Storage ratings were in fact out of 25, not 20 and speaking of Storage, two of the items listed on page 19 appeared in the wrong box – the Advent PC in fact has a 30Mb hard disk and a 5.25" floppy, while the Amstrad PC2286 has two 3.5" floppy drives giving a total of 2.88MB of storage.

Sorry for any confusion, folks.

Man's best friend is his SuperCalc



Be they ever so interesting, the trouble with computers is that they're visually very dull. Dogs, it has to be said, are exactly the opposite. So the marriage of the canine and the silicon has a perverse logic to it. That's exactly the sort of thing to appeal to Abbott Computer Products in its dogged quest to offload a vast quantity of Amstrad software as cheaply and as quickly as possible.

The only surprise is that Abbott wasn't straining at the leash to come up with some snappy dog pun to justify the whole caboodle.

And that's where you come in. Just answer the following questions correctly and supply a witty speech bubble/slogan, and you'll win a copy of *WordStar 1512* or *Supercalc 3.1*.

1. How many dogs are there in this picture? (Those making any reference to the quality of Amstrad's software will be disqualified on the grounds of crassness).
2. Exactly why is the – er, bigger dog sitting in a chair (obscenities – ditto above).
3. What is the connection between superglue and the labrador?
4. Name any computer product of any sort that has any connection – however tenuous – with dogs.

Send your answers and terribly witty caption/bubble to Lead Story, c/o PSsst/ c/o New Computer Express, 4 Queen Street, Bath, BA1 1EJ

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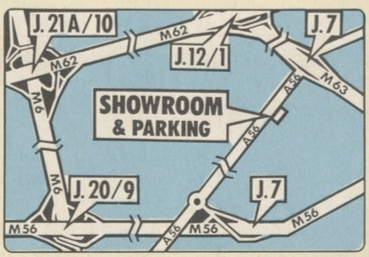
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